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Inter American University of Puerto Rico

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2022-2023**

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The University will make all reasonable efforts to maintain up-to-date information in this Catalog. However, it reserves the right to revise or change rules, revise tuition fees, service charges, requirements for programs of study, the requirements for degrees and academic distinctions, course content and any other arrangements that might affect students whenever it deems necessary or desirable.

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General Information

History of the University

Inter American University of Puerto Rico is a private institution with a Christian heritage and an ecumenical tradition. It is a non-profit organization that provides college instruction to persons of both sexes. It was originally founded in 1912 as the Polytechnic Institute of Puerto Rico by the Reverend J. William Harris and offered elementary and secondary education on the land occupied today by the San Germán Campus. The first college level courses were started in 1921 and in 1927, the first group of students graduated with Bachelor's Degrees. In 1944, the Institution was accredited by the Middle States Association of Colleges and Schools. It was the first four-year liberal arts college to be so accredited outside the continental limits of the United States. This accreditation has been maintained since then.

The school is approved by the Puerto Rico State Approving Agency to provide academic training to the students under the various GI Bill® programs. "GI Bill®" is a registered trademark of the U.S. Department of Veterans Affairs (VA). The programs of the University are authorized by the Board of Postsecondary Institutions of Puerto Rico (JIP) and by the Department of Education of Puerto Rico, which certifies teachers for the public school system of Puerto Rico. Inter American University's School of Law is accredited by the American Bar Association and the School of Optometry, inaugurated in 1981, by the Council on Optometric Education. In March 1982, the first doctoral program was initiated.

Inter American University is the largest private university in Puerto Rico. Enrollment, in recent years, has been maintained at approximately 43,000 students. At the present time, about 21 percent of all the Island's college students and 35 percent of the students who go to the Island's private colleges attend Inter American University.

Inter American University's tradition of public service, the geographical location of its instructional units and its continuing attention to student needs make it especially attractive and accessible to students from all the municipalities of Puerto Rico. The increasing availability of both Federal and Commonwealth funds for student financial aid has enabled many students, who otherwise would not have been able to do so, to get a college education.

Governance

The highest governing body of Inter American University is a self-perpetuating Board of Trustees, whose members are elected by the Board itself without any outside intervention or tutelage of any kind.

The President is the chief executive and academic officer of the Institution. The Managerial Systemic Council is composed of the President of the University, Vice-Presidents, Chancellors, the Deans of the Schools of Law and Optometry, an Executive Secretary appointed by the President, the Executive Director of the Information System, the Executive Director of the Office of the Juridical Advisor, the Executive Director of the Office of Evaluation and Systemic Research, the Executive Director of the Human Resources Office, the Executive Director of the Office of Promotion and Recruitment. In addition, when affairs relevant to their functions are being considered by the Council, the following persons will attend as advisors: The President of the University Council, and the Director of Planning and Systemic Development of Physical Plant.

Subject to the approval of the President of the University and of the Board of Trustees, the faculties of the School of Law and of the School of Optometry are responsible for their own academic programs and standards. Nevertheless, in all other respects, these professional schools are also subject to university-wide policies, norms and procedures.

The Academic Senates of the instructional units and the University Council, heirs of the Academic Senate created in 1966 and succeeded by the University Senate in 1973, are primarily concerned with the academic wellbeing of the University through the process of academic articulation among the Campuses. The Academic Senates establish academic norms subject to the ratification of the University Council and the concurrence of the President. Both bodies formulate recommendations on affairs related to educational, administrative and research policy.

Vision

Inter American University of Puerto Rico is a top quality higher education institution in search of academic excellence, with emphasis on the formation of people with democratic and ethical values, framed in an ecumenical Christian context.

Institutional Mission

Inter American University of Puerto Rico has the mission to offer post-secondary and higher education in the arts and sciences, by means of teaching, research and community service, within an ecumenical Christian context. In addition, it offers educational programs at the pre-school, elementary and secondary levels.

The University, also, contributes to society, by educating people that come from different socioeconomic sectors, within and outside Puerto Rico. It incorporates in its offerings and services, innovating study modalities supported by informatics and telecommunications. The University aims to prepare its graduates to be responsible and cultured citizens, with democratic and Christian values, who are conscious of their social and environmental obligation, and are able to perform competently and exercise leadership in an occupational or professional context.

The University aims to maximize the educational potential of students in an environment without discrimination, in compliance with the law, the accreditation regulations and standards. All this, in harmony with the search for academic excellence, critical thinking, scientific knowledge, and sensitivity towards the arts, ethical responsibility and the skills of social coexistence.

Goals of the University

The University faculty and the administration strive to achieve the following institutional goals:

1. To promote, in the university community, an environment oriented towards a culture of peace, based on ethical, democratic and institutional Christian-ecumenical values, directed to the integral development of the student.

2. To promote an integral education that leads to the formation of an educated person, well-versed in the different fields of the human knowledge, by means of the development of the capacity for critical thinking, the adequate use of the communication skills in Spanish and English, ethical and civic responsibility, environmental awareness, skills of social integration, and the knowledge of science, the arts and religious education within a Christian-ecumenical context.

3. To respond to the needs of the student population and society by offering a variety of both in-campus and online education programs, within and outside Puerto Rico, at the different educational levels.

4. To foment academic excellence by means of the continuous development of the teaching staff in the mastery of their discipline, as well as in the application of techniques, modalities and teaching methods, in harmony with the nature of the student population.

5. To foment the development of knowledge through research and creative activities in the academic community.

6. To promote efficiency and effectiveness in the teaching, administrative and student processes and services, in harmony with the provisions in the applicable laws and regulations, as well as in the standards of the accrediting agencies.

7. To cultivate leadership of the university community so that it may contribute to social and cultural enrichment of our country and to its economic development, by means of participation in communitarian, business and professional projects.

Religious Life Policy

Inter American University of Puerto Rico is an ecumenically oriented institution, but does not adhere to any one particular theology or ecclesiastical body. Founded by Dr. John William Harris, a minister of the Presbyterian Church, Inter American University maintains a historic, friendly and enriching association with that communion as well as with other Christian groups in accordance with its ecumenical spirit.

Inter American University of Puerto Rico is a community of higher education dedicated to a comprehensive search for truth within an environment of responsible freedom and through the encouragement of a mature academic life which guarantees true freedom of investigation. Within this context, religion is studied in the University as an academic discipline designed to engage in fruitful dialog with other university disciplines.

In affirming its commitment to the Christian ecumenical ideal, the University dedicates itself to the renewal and reaffirmation not only of its own Christian heritage, but also the culture within which it is situated and which it serves. This does not oblige the acceptance of all the details of our Christian past nor of all the elements of modern Christianity. Nevertheless, the University has fostered and will continue to foster the convergence of all Christians in the one faith centered about the person of Jesus Christ as He is made known to us in the apostolic tradition of the Scriptures as the One whom Christians

regard as decisive, definite and normative in man's relations with God and his fellow men and society. The University affirms its conviction that to be a Christian today implies, on the one hand, knowledge of and obedience to the Gospel and, on the other, identification with the Universal church by means of an individual commitment to a particular Christian communion.

The ecumenical posture of the University involves openness to society, science, technology and a plurality of faiths; it involves an integral education of each individual so he or she may exercise a vocation within his or her community in a responsible and productive way; it involves a commitment to serve though not to dominate society; and it involves the development of friendliness, fellowship and understanding to bridge human barriers.

The University promotes the following Christian-ecumenical values:

WE BELIEVE IN GOD AS A SUPREME BEING

God is the Supreme Being who created all that exists. His power and presence are revealed in the person of his Son Jesus, the Savior, and in the Holy Spirit, that guides the community of faith.

WE BELIEVE IN JESUS

We accept that the apostolic tradition of the Scriptures recognizes and accepts Jesus as decisive, definite and normative for humans' relations with God, their fellow men, family and society. Since He is the Savior and Mediator of Humanity, it is our commitment to continue fostering the convergence of all Christians through the one faith around the person of Jesus.

WE BELIEVE IN LIFE

We affirm that life is a gift of God. We foment that all human beings value their life so they may be able to give their best to the country, family and society. We promote the preservation of life, and therefore promote a Christian consciousness in education.

WE BELIEVE IN THE FAMILY

We believe that the family is the essential social nucleus where the initial values that shape the person are developed. We commit ourselves to reinforce these values, from their Biblical foundation, that help each human being to achieve the complete life and make it extensive to others.

WE BELIEVE IN SERVICE

We affirm our ecumenical Christian ideal and devote our efforts to renew and reaffirm service to our country, society, family and fellow men.

WE BELIEVE IN THE IDENTITY OF THE CHRISTIAN COMMUNITY OF FAITH

We affirm that the conviction of being Christian implies knowledge of and obedience to the Word of God and, also, identification and commitment to the Church and to the person's particular Christian community.

WE BELIEVE IN INTEGRAL EDUCATION

Our Christian ecumenical position provides openness to society, science and technology, with an integral mentality, an attitude of respect and a moral conduct in harmony with our values.

We foment the integral education of each person for carrying out his vocation in a responsible way and with a moral conduct and a productive performance in his community.

We are a community of higher education in an integral search of the truth, within an environment of freedom, through the encouragement of a mature academic life that guarantees the true freedom of investigation.

WE BELIEVE IN THE COMMITMENT WITH OUR FELLOW MEN

We believe that to be Christian it is to have and show a commitment of service to others based on love and not on the dominion of society, but rather on promoting friendship, solidarity, tolerance and understanding to bridge human barrier.

WE BELIEVE IN THE STUDY OF THE CHRISTIAN RELIGION

We promote the study of the Christian religion as an academic discipline in which a fruitful dialog with the other academic disciplines is maintained.

We will continue to strengthen the development of the religion studies program by providing all students the opportunity to acquire an understanding of the Christian faith and its implications for our culture.

To achieve this, Inter American University of Puerto Rico will continue and strengthen the development of its programs of religious studies and will provide to all its students an opportunity to understand the Christian faith and its implications for our culture; the University will furnish information about the most important aspects of the

world's major religions to its students and will encourage them to appreciate these religions within their historic, theological and philosophic context. In this way, the search for faith and for the means to humanize mankind may be seen as a relevant option in a world striving for greater understanding and happiness.

The commitment of Inter American University to its Christian Heritage, as well as to its academic mission, will manifest itself through the development of an ecumenical program of religious life.

In accordance with this basic religious philosophy for the academic study of religion and for the development of religious activities, Inter American University, by its act and works, will:

1. Encourage the expression of the Christian principles here set forth,

2. Require the academic study of fundamentals of the Christian faith,

3. Require each instructional unit to establish an Office of Religious Life, which will serve the entire University community.

Accreditations

The eleven academic units of Inter American University of Puerto Rico are authorized by the Board of Postsecondary Institutions of Puerto Rico and accredited by the Middle States Commission on Higher Education to offer university studies of the undergraduate, graduate and professional levels, as the case may be. Likewise, the University is committed to the professional accreditation of its academic programs. For this reason, some academic units have programs accredited by organizations, such as:

1. Accreditation Board for Engineering and Technology (ABET)

   • Bayamón Campus (BS)

2. Accreditation Commission for Education in Nursing") (ACEN)

   • Aguadilla, Arecibo and Metropolitan campuses (BSN)

   • Aguadilla and Metropolitan Campus (AAS)

3. Accreditation Council for Business Schools and Programs (ACBSP)

   • Bayamón Campus (BBA)

4. Accreditation Council on Optometric Education (ACOE)

   • School of Optometry (OD)

5. American Bar Association (ABA)

   • School of Law (JD)

6. Aviation Accreditation Board International (AABI)

   • Bayamón Campus (BS)

7. Commission on Accreditation in Physical Therapy Education (CAPTE)

   • Ponce Campus (AS)

8. Commission on Collegiate Nursing Education (CCNE)

   • Baranquitas, Bayamón, Guayama, Ponce, and San Germán campuses (BSN)

9. Council for the Accreditation of Educator Preparation (CAEP)

   • Aguadilla (TEAC), Arecibo, Fajardo, Metropolitan, and Ponce campuses

10. Council on Accreditation of Nurse Anesthesia Educational Program (COA)

    • Arecibo Campus (MS)

11. Council on Social Work Education (CSWE)

    • Aguadillla, Arecibo and Fajardo campuses (BA)

    • Metropolitan Campus (BA, MSW)

12. International Assembly for Collegiate Business Education (IACBE)

    • San Germán Campus: Specialized accreditation for its Business Administration undergraduate and graduate programs.

13. International Association for Continuing Education and Training (IACET)

    • Aguadilla, Arecibo, Barranquitas, Bayamón, Fajardo, Guayama, Metropolitano, Ponce and San Germán campuses

    • School of Law

    • School of Optometry

14. Joint Review Committee on Education in Radiologic Technology (JRCERT)

- Ponce and San German campuses (AAS)

15. National Accrediting Agency for Clinical Laboratory Sciences (NAACLS)

- Metropolitano and San Germán campuses (BS, Professional Certificate)

16. Network of International Business Schools (NIBS)

- Metropolitan Campus (Division of Economic and Administrative Sciences)

17. UWNTO.TEDQUAL- World Tourism Organization

- Fajardo Campus – BBA Tourism Management

18. ISO 9001- International standard for a quality management system ("QMS")

- Metropolitan Campus – Quality of academic and administrative processes

Associations

Inter American University is member of the following professional organizations:

American Council on Education (ACE)
American Institute of Certified Public Accountants (AICPA)
Asociación de Colegios y Universidades Privadas de Puerto Rico (ACUP)
Asociación de Industriales de Puerto Rico
Association of American Colleges and Universities (AACU)
Association of Governing Boards of Universities and Colleges (AGB)
Association of Presbyterian College and Universities (APCU)
Broadcast Music, Inc. (BMI)
College Board
Council of Graduate Schools (CGS)
Hispanic Association of Colleges and Universities (HACU)
Hispanic Educational Telecommunications System (HETS)
National Association of College and University Attorneys (NACUA)
National Association of Independent Colleges and Universities (NAICU)
National Association of Student Financial Aid Administrators (NASFAA)
Organización Universitaria Interamericana (OUI)

Reserve Officers Training Corps (ROTC)

Since January 1975, Inter American University has had formal arrangements with the University of Puerto Rico whereby male and female students of Inter American University may register in the University of Puerto Rico's program for the training of Reserve Officers. Arrangements for participation in this Program should be made with the Department of Military Science or Department of Aerospace Studies at the University of Puerto Rico in Río Piedras or Mayagüez. All ROTC credits taken by Inter American University students under this agreement will be included on their transcripts together with their corresponding grades. These grades will be counted in the grade point index.

Inter American University will accept as elective credits for undergraduate degrees a maximum of twelve credits received in ROTC courses at the 3000 or 4000 levels. This norm is applicable to credits received from the University of Puerto Rico under the aforementioned agreement or before its effective date and to credits received from another institution. Any credits not received under the agreement will be considered as transfer credits.

Services for Veterans, Military Personnel and Dependents

The school is approved by the Puerto Rico State Approving Agency to provide academic training to the students under the various GI Bill® programs. "GI Bill®" is a registered trademark of the U.S. Department of Veterans Affairs (VA). Eligible students intending to enroll and receive VA educational benefits should submit an application through the Department of Veterans Affairs portal.

The eligible students, have the right to enjoy these benefits only for the period of time required for completing their academic degree as established in this Catalog and by applicable legislation and regulations.

Study time required for completing an academic program depends on the number of credits required for the program, the nature of the courses and the number of credits the student takes each term. An estimate of the period of time

required may be obtained by dividing the total number of credits required for the program by 15, which is the average number of credits taken by a full-time regular student.

Students accumulate semesters of study as indicated below:

Term	Student Classification	Terms of Study (in percent)
Semester	Full-time	100.0
	Part-time	50.0
Trimester	Full-time	66.7
	Part-time	33.3
Bimester	Full-time	50.0
	Part-time	25.0

Students also accumulate study time at the rate of one (1) semester for every twelve (12) transferred credits.

A Covered Individual is any individual who is entitled to educational assistance under chapter 31 Veterans Readiness and Employment and chapter 33 Post-9/11 "GI Bill®". "GI Bill®" is a registered trademark of the U.S. Department of Veterans Affairs (VA).

Our policy permits any covered individual to attend or participate in the course of education during the period beginning on the date on which the individual provides to the educational institution a certificate of eligibility for entitlement to educational assistance under chapter 31 and chapter 33. A "certificate of eligibility" can also include a "Statement of Benefits" obtained from the Department of Veterans Affairs' (VA) website - eBenefits, or a VAF 28-1905 form for chapter 31 authorization purposes) and ending on the earlier of the following dates:

1. The date on which payment from VA is made to the institution.

2. 90 days after the date the institution certified tuition and fees following the receipt of the certificate of eligibility.

Our policy ensures that our educational institution will not impose any penalty, including the assessment of late fees, the denial of access to classes, libraries, or other institutional facilities, or the requirement that a covered individual borrow additional funds, on any covered individual because of the individual's inability to meet his

or her financial obligations to the institution due to the delayed disbursement funding from VA under chapter 31 and chapter 33.

Academic-Administrative Calendars

The calendars for the academic terms are available on the website of each of the campuses and professional schools.

Instructional Units

Inter American University offers academic programs in the following eleven instructional units: The Aguadilla, Arecibo, Barranquitas, Bayamón, Fajardo, Guayama, Metropolitan, Ponce and San Germán Campuses; and in two professional schools: Law and Optometry.

Academic Degrees

Inter American University offers pre-university, undergraduate, graduate and professional academic programs for obtaining certificates and Associate, Bachelors, Masters and Doctoral degrees in subject matters normally offered by institutions of higher education of a nature, educational mission and goals similar to those of this University. The School of Law of Inter American University grants the Juris Doctor degree and the School of Optometry, the Doctor of Optometry degree.

Some of the University's instructional units offer special programs, which are usually funded by federal grants. The educational activities of the Institution also include courses, seminars and institutes carried out as part of the University's Continuing Education Program.

Publications

Inter American University has a variety of publications to facilitate communication within the University community, with alumni and with other academics and academic communities.

Interamericana is the official publication of Inter American University. It is published four times a year and its approximately 30,000 copies are distributed to students, faculty, administration, alumni and friends of the Institution. This publication covers activities from all instructional units and features special interviews and current events affecting education or the development of the Institution as well as general information regarding the faculty and administration.

Videoenlace Interactivo is a publication of the Vice-

Presidency for Academic and Student Affairs and Systemic Planning. Its objective is to share the experiences of professors and students in the field of online education. It serves as forum for dialog and the exchange of ideas in the use of technology in the educational process.

The *Law Review*, edited by students, is the official publication of the School of Law. Its articles are written by professors and students from the School of Law, judges and practicing lawyers. Because of the careful selection of its articles, the Law Review of Inter American University's School of Law is highly esteemed in the field of law.

Homines is published by the Metropolitan Campus. It contains critical analyses of current thoughts and events relevant to national and international affairs in the vast field of the social sciences. It is published twice a year.

Prisma is published annually by the Arecibo Campus. It has an interdisciplinary focus for the purpose of fomenting research and literary creativity in the University community. Essays, critiques, poems and short stories are published.

Surisla is published annually by the Ponce Campus. It transmits the literary works of the University community as well as the extramural contributions through an interdisciplinary focus.

Continuing Education Program

Inter American University established the Continuing Education Program to promote efforts to develop a will for continuous learning. The University has always maintained its commitment to facilitate ample educational opportunities to fulfill its philosophy of providing learning experience oriented towards the continuous acquisition of knowledge.

The Program facilitates the update of knowledge, the development of skills or their refinement for those persons who return to the University with the purpose of improving their education in order to continue participating and contributing in a highly competitive world. The Program provides learning experiences through up-to-date, pertinent, dynamic and innovative academic offerings. This Program is directed to those persons who need, desire or are required to learn, develop, update or refine their skills and acquire knowledge for their personal or professional improvement. It aims to achieve the following objectives:

1. To provide an academic offering that responds to the interests and needs of the community and groups the

Program serves.

2. To promote and foster continuing education through the dissemination of the purpose and content of the Program.

3. To offer excellent services geared to attain the maximum satisfaction of the participants.

4. To promote and maintain collaborative projects with local and international entities in order to satisfy their market demands.

5. To support University efforts in the promotion of cultural enrichment and social wellbeing as in means to improve the quality of life.

Academic Offerings of the Continuing Education Program

The Continuing Education Program will make available to the academic and non-academic university community a variety of courses, seminars, trainings and workshops in which a variety of specialized themes will be presented. In addition, it will promote an ample offering of pertinent current educational experiences as well as non-traditional experiences to attend to the changing needs of private business and government agencies. By means of innovative and multidisciplinary activities, faculty members will stimulate students to participate in experiences that make the learning process more participatory and dynamic, until they obtain control over the curricular content they are learning. At the same time, students will be motivated to learn from their classmates' experiences in an environment of mutual and productive collaboration. Efficient attention will be given to those persons interested in or required to acquire new knowledge or update that which they already possess. It will also serve the needs of those persons whose profession requires that they take continuing education units and those who have the will and the interest to continue learning and acquiring knowledge for their own satisfaction.

Program personnel will collaborate with the academic departments in the preparation and implementation of proposals that aim to offer continuing education courses with University credit. This may be for special students or to satisfy the demands or particular needs of some professional organization, private enterprise or government agency. The academic units offered with University credits as part of the Continuing Education Program, must meet the established University norms and rules and laws that govern Higher Education in Puerto Rico. The administrative aspects inherent to the development of this

special offering with academic credits (planning, programming, faculty contracts, approvals from accrediting agencies, among others), will be the responsibility of the corresponding academic department.

Development of Educational Offerings in Continuing Education

The Program will offer other educational activities to satisfy particular needs that may arise in service areas of the campuses, such as: summer camps, reviews in preparation for standardized tests, special projects, symposiums, conferences and others.

Development of Educational Activities

1. Different educational activities will be available in special schedules in and outside of institutional facilities. Each one of these will be specifically designed to satisfy the needs and interests of diverse populations that will share their time between study and other personal, occupational, or professional enrichment activities.

2. These educational activities will take place in physical facilities prepared with appropriate resources for learning and in which faculty members will be able to develop their classes in an efficient manner. The Chief Executive Officer of the campus will be responsible for providing the required conditions for the fulfillment of this norm.

3. The different academic units will utilize technological advancements to make their academic offerings or special activities available to different populations both in and outside of Puerto Rico.

4. The Program will maintain a faculty with the required academic preparation, vast experience, ample knowledge and up-to-date professional knowledge in the different curricula in order to facilitate the acquisition of practical and pertinent knowledge in accordance with the demands of a highly technological and competitive world.

5. The Central Office, as well as the academic units, will provide activities for the continuous enrichment and professional development of the faculty and other program personnel in curricular and pedagogical matters. Program faculty may participate in the developmental learning experiences planned for the regular faculty of academic unit.

6. The Chief Executive Officers may consult and request advice from the Vice Presidency for

Academic and Student Affairs and Systemic Planning with regard to the academic development of the Program or in any other related matter.

Alumni Association

The Alumni Association Poly-Inter is an organization of graduates and former students who attended Inter American University or Polytechnic Institute. The Association keeps its members informed of University activities and involves them in its development. The Association is governed by a Board of Directors composed of 29 members, nine of which correspond to the alumni chapters of the different campuses and two members to the professional schools. In addition, the Association is represented on the Board of Trustees of the University by an Alumni Trustee. Each year the Alumni Association holds two primary activities: the celebration of Founders Day and the honoring of distinguished alumni.

Admission to the University

All students to be admitted must present a valid document that proves their identity, for the purposes of compliance with the law and applicable regulations. Students admitted, domiciled in Puerto Rico or in a state or territory of the United States, may present for this purpose, any valid document recognized at their domicile for personal identification purposes.

Any student admitted to a fully online distance program domiciled outside the United States, may present for this purpose, any valid document recognized in their country of origin for personal identification purposes.

A valid document refers to, but is not limited to, passport, driver's license, national identification document, virtual or digital identification or provisional means of identification, among others.

Admission to the University does not imply being admitted to a particular study program. This is valid for the academic term in which it is granted. However, the validity of the admission may be extended, at the request of the applicant, for an additional period of no more than one academic term.

Admission to Graduate and Professional Programs

The requirements and procedures for admission to the Master's and Doctoral Programs are presented in the Graduate Catalog and in the School of Law and School of Optometry catalogs.

Provisional Admission

In the event that a student requests admission before graduation from high school or has difficulty in obtaining the graduation certification or other documents required by the Institution, the student may be considered for provisional admission if they meet the admission requirements. The student may be admitted, granting an academic term to submit the corresponding documentation. The chief executive of the unit may extend that period for just cause. In the event that the student does not comply with the requirements at the end of the extension, he/she will not be able to enroll in the next academic term.

Provisional Admission to Academic

Programs at the Undergraduate Level

In case students must meet some specific requirement to be admitted to an academic program, they will be granted a provisional admission.

1. Students must meet the requirements, with a minimum grade of C or as required for the study program they wish to attend, before or during the maximum period of time stipulated for this.

2. If students do not complete the totality of the required courses at the end of the time limit, they will be evaluated by the department director to determine if they can receive an extension of one academic term to continue their studies.

3. Students, who do not meet the requirements of provisional admission in a reasonable time, must change to a study program for which they meet the admission requirements.

Provisional Admission of Transfer Students

When students cannot provide some of official documents required by the University to complete the admission by transfer process, they will be admitted provisionally, if they provide a copy with these documents.

Student admitted provisionally will have thirty (30) calendar days from the date of admission to submit the required documents. The chief executive officer of the unit may extend that period for just cause. Students that do not comply with this requirement by the end of the extension will be dropped.

Requirements for Undergraduate Admission

Applicants to any campus of Inter American University of Puerto Rico at the undergraduate level must comply with one of the following options:

Option A:

1. Submit an official document issued in any tangible medium that serves to certify that the student has

completed the graduation requirements of an accredited high school, with a GPA of 2.00 or its equivalent.

In the event that a student requests admission before graduation from high school and has difficulty obtaining the certification that proves that the student has completed the graduation requirements or any other document that must be presented, the student will be admitted on a provisional basis. The student thus admitted will have an academic term to present the required documentation. The chief executive of the corresponding academic unit may extend this period.

2. Submit the results obtained in the *Prueba de Admision Universitaria* (PAA), the School Aptitude Test (Schoolastic Aptitude Test) or any other equivalent.

Note: Due to the health emergency caused by the Covid-19 Pandemic, students who apply for admission until December of 2022, are exempt from this requirement. For those academic programs with particular requirements established in this General Catalog, related to the PAA, SAT or any other equivalent, this requirement continues in force.

3. Obtain an index of 785 or its equivalent, according to the procedure established by the Admissions Office.

Option B:

1. Submit an official document issued in any tangible medium that serves to certify that the student has completed the graduation requirements of an accredited high school, with a GPA of 3.00 or its equivalent.

2. This admission option does not require the presentation of the result of the PAA test, the Schoolastic Aptitude Test or any other equivalent.

Undergraduate Admission Procedures

Applicants for admission to any campus of Inter American University of Puerto Rico must:

1. Submit an electronic admission application or submit a paper application to an authorized recruiting or admissions officer.

2. Submit the application for admission, preferably no later than one month prior to the beginning of the academic term for which the student is applying.

3. Make sure that the credit transcript, graduation certification, or any other document that serves to prove that you completed high school or its equivalent, has been sent to and received by the Admissions Office.

4. Make sure that the results of the admission test for university studies have been received.

Once the documents required by the university have been delivered, they become the exclusive property of the Institution. Final decisions regarding applications will normally reach the applicant no later than three weeks after all application materials have been received by the University. If for any reason the University requires more time, the applicant will be notified. A personal interview of an applicant for admission may be required.

Early Admission to University Studies

The Early Admissions Program offers high school juniors the opportunity to apply for admission to undergraduate studies. These students will be selected on the basis of their achievements. The minimum requirements are: 1) 3.00 high school grade point average; 2) an average score of 550 or its equivalent on the admission test taken by the student; 3) evidence of having passed two years of high school English, two years of Spanish, two years of a combination of Science and Mathematics.

These students are not eligible to receive financial aid from Title IV.

These students may return to high school studies without prejudice to their future chances in higher education if they find they are unable to cope with the university curriculum. It is the responsibility of the student to take the necessary steps in the Puerto Rico Department of Education to receive high school graduation certification.

Admission of New Students to AVANCE

Students, who do not own university experience and request admission to the program, must comply with the following requirements:

1. Be at least 21 years old or be legally independent, as demonstrated by means of an official and valid document (copy of the Birth Certificate, copy of the Liberation Document, copy of Marriage Certificate or copy of a document issued by some pertinent

agency).

2. Submit an official document issued in any tangible medium that serves to certify that the student has completed the high school graduation requirements.

The chancellors shall use administrative procedures and strategies that assure that the institutional commitment to offer students the necessary services while attending the University, are met. The adequacy, effectiveness and efficiency in offering these services contribute to improve learning, a higher retention rate and a good image in the community.

Homeschooling

1. Students of homeschooling may apply for admission to the University in two ways:

   a. Submit an affidavit that declares that the student completed his studies by the home learning modality (homeschooling).

   b. Submit the results obtained in the *Prueba de Admisión Universitaria* (PAA), the School Aptitude Test (Schoolastic Aptitude Test) or any other equivalent. The student is required to have obtained a minimum average of 480.

Note: Due to the health emergency caused by the Covid-19 Pandemic, students who apply for admission until December of 2022, are exempt from this requirement. For those academic programs with particular requirements established in this General Catalog, related to the PAA, SAT or any other equivalent, this requirement continues in force.

2. Obtain a minimum income index of 785 or its equivalent, according to the procedure established by the Admission's Office.

University Credits through Advanced Placement Testing

Entering students may obtain university credits upon fulfilling the following:

1. Have obtained 3 or more points on a 5 point scale on the College Board Advanced Placement Test. Six university credits will be given for each test.

2. Have obtained scores recommended by the American Council on Education on College Examination Program tests.

3. Have taken in British areas the General Certificate of Education (GCE) Advanced Level Examination and have obtained a grade of "Pass".

Admission of Transfer Students

All candidates for admission by transfer from another university or college must submit an application for this purpose. Students must request that the office of the registrar of the university or college of origin send a copy of their official transcript to the appropriate Admissions Office of Inter American University.

Students will be considered candidate for admission by transfer, if they:

1. Passed in another accredited institution at least 12 credits with a grade of C or better, except in academic programs that establish different requirements, in which case they must meet these requirements.

2. Submit a Certificate of Transferred Students whereby students will certify that he/she has not been suspended for disciplinary reasons at their university of origin.

The admissions requirements for transfer students interested in studying through the Services Program for Adult Students are included in that section in this Catalog.

Students who have passed fewer than twelve transferable semester credits at another postsecondary institution may request admission by following the procedures indicated in the section "Requirements for Undergraduate Admission (p. 61)" in this Catalog. Upon admission, such students will receive credit for transferable academic work completed at another postsecondary institution.

Before matriculation, a student may make a written appeal to any decision made regarding transfer credits. Such an appeal is to be submitted to the Office of Admissions. Once a student has been enrolled, no further consideration of previous credits from other institutions will be given.

Students who have been required to withdraw for academic reasons from another university are not eligible for one academic term after withdrawal. Nevertheless, they are eligible for immediate admission if they choose a major different from the one they were required to withdraw from.

Transfer Credit Policy

Transfer credits may be allowed only for authorized

programs in the University, but credits may apply as electives provided that the equivalent courses are within the programs of study of existing departments of Inter American University. No grade below C is acceptable for transfer. If the other institution uses a different grading system, the acceptance of the course will depend on that institution's official clarification of its grading system. Inter American University will determine the corresponding equivalencies. Once the course from Inter American University is identified as equivalent to the course taken at the institution of origin, the confirmation will be made.

The school accepts a maximum of 67 % of transfer credits from other schools toward associate degree programs of study. Students must satisfactorily complete at least one third of the credits required for the degree and at least one third of the credits required for the major at Inter American University.

The school accepts between 80 % and 85 % of transfer credits from other schools toward bachelor degree programs, depending on the total number of credits required by the program. Students must satisfactorily complete at least 24 credits of the total number of credits required for the degree at Inter American University, of which at least 15 credits must be credits required for the major. The rest may be General Education courses or elective courses.

Some programs of study do not allow transfer of credits. These exceptions are noted in this Catalog under the program description.

The credit-hours granted will be those that are specified in this Catalog for the course. Generally, students obtaining scores of 3 or above on the Advanced Placement tests offered by College Board will receive university level credit.

Students who hold a bachelor's degree from another institution are exempt from taking general education courses and are only required to take the GECF 1010 - Introduction to the Christian Faith, a three (3) credit course, at Inter American University if it has not been approved at the institution of origin. The corresponding comment will appear in the student's file.

Students from British areas who receive a "Pass" or above in the GCE Advanced ("A") Level Examinations may receive credit toward advanced standing.

All acceptable courses completed at Inter American University or elsewhere by students not regularly admitted to the University or in the Early Admission Program will be credited as soon as they have been admitted as regular students. Once students have been enrolled, no further consideration of previous credits from other institutions will be given, except for courses in progress. Every transferred course will be entered as an attempted and approved course for purposes of the satisfactory academic progress norm and the norm for repeating courses.

If students take a course that is in their academic record as a transferred course and receive a grade, the administrative action symbol T must prevail in the file. If the student obtains the grade of C or above, this will be considered to determine the general academic index and the academic index in the study program, as applicable. If the student obtains a grade of D or F, this will not be considered to determine these indices.

Provisions Applicable to All Types of Transfers

Students, who have not taken English courses, must submit the result of the PAA test for placement in the appropriate levels of English.

Admission of Transfer Students to AVANCE

Students who have studied in another accredited institution and desire admission to this Program must:

1. Be 21 years of age or more or be legally independent at the time they request transfer. This must be demonstrated by an official and valid document (copy of the Birth Certificate, copy of the Liberation Document, copy of Marriage Certificate or copy of a document issued by some pertinent agency).

2. Not be suspended for disciplinary reasons at the educational institution of origin.

Students from the other institution who have been suspended for disciplinary reasons may be admitted on probation for a period not less than six months or greater than one year. This admission may be granted after the case has been evaluated and the admission recommended by an adviser designated at the unit. After the probationary period the case will be submitted again to the adviser for a definite decision, following an evaluation.

All transferred students desiring to complete a second academic degree must comply with the section Graduation Requirements and Information of the current Catalog for

the degree they seek.

Admission to Special Programs

Students in special programs may be admitted following the norms established by the President of the University.

Admission of Audit Students

Students wishing to enroll in courses for audit must do so during the official registration period of the academic term or during the official period for changing courses. Such students must pay the course fee for auditing. Students who have not applied for admission should do so before registering as audit students.

Admission of Foreign Students

Admission to undergraduate programs leading to a Bachelor's degree requires that the applicant has completed secondary studies equivalent to the high school graduation requirements of Puerto Rico.

Foreign students may be admitted when they meet the following requirements:

1. Submit proof of degree equivalency issued by a recognized credential evaluation agency.

These students are exempt from taking and presenting the results of admission tests of the University or of aptitude tests, such as the PAA test or the SAT. The Institution may require an admission interview or the writing of an essay.

Foreign students interested in entering the University must submit their questions to the academic unit to which they wish to be admitted.

If the applicant is admitted, the Admissions Office will complete the I-20 form of the Citizenship and Immigration Service of the United States of America so that the proceedings to obtain the student visa may be completed. Students admitted to study totally online do not have to complete this form.

Admission of Special Students

Special students will be:

1. 1. students of other institutions of higher education that have authorization to take courses at Inter American University of Puerto Rico (IAU) to fulfill requirements of their home institution. These students will be required to present a certification indicating the courses they are authorized to take at IAU;

2. 2. persons not interested in obtaining an academic degree, but in taking courses for their professional or personal improvement;

3. 3. high school students authorized to take advanced courses as part from their high school requirements;

4. 4. students from other universities participating in student exchanges;

5. 5. teachers of the Department of Education of Puerto Rico (DEPR) who want to satisfy some requirement of that agency. An official document of the DEPR indicating the courses they must take will be required.

Special students will not be required to submit a copy of their academic file to be admitted.

The special students described above in numbers 1 to 4 will not be eligible for federal Title IV, or state financial aid.

All applicants who later decide to continue their studies with a view to obtaining a university degree or certificate must comply with the University's requirements and admission procedures, in harmony with the study program of their interest.

In case special high school students are later admitted as university students, the courses already approved may be accredited to them.

Admission to Online Education Programs

The admission requirements for students interested in undergraduate studies totally through online education are presented below. The information includes: (a) Admission of Students from the Educational System of the United States of America and Puerto Rico, (b) Admission by Transfer from Other University Level Institutions, (c) Admission of Students from Other Educational Systems and (d) Special Admission of Students not interested in a Degree or Academic Title.

Admission of Students from the Educational System of the United States of America and Puerto Rico

Students from the educational system of the United States of America and Puerto Rico must:

1. Present evidence of graduation from an accredited secondary school or its equivalent with a minimum

grade point index of 2.00

2. Present the scores obtained in the one of the following admission tests, or equivalent:

    a. The results of the PAA test.

    b. Scholastic Aptitude Test (the SAT) administered by the College Board in the United States of America.

    c. American College Testing (ACT).

Note: Due to the health emergency caused by the Covid-19 Pandemic, students who apply for admission until December of 2022, are exempt from this requirement. For those academic programs with particular requirements established in this General Catalog, related to the PAA, SAT or any other equivalent, this requirement continues in force.

3. Obtain a minimum income index of 785. This is calculated by adding the average of the scores obtained in the three sections of the PAA test and the product of the high school academic index multiplied by 200.

4. Be interviewed by the means available when deemed necessary

Admission by Transfer from Other University Level Institutions

Candidates for admission by transfer from other university level institutions must:

1. Submit the admission application with an official copy of the academic transcript from the university or college of origin. The copy of the transcript must be sent directly from the offices of the registrar of those institutions to the appropriate Admissions Office of Inter American University.

2. Have at least 12 transferable semester credits with a minimum grade of C from another accredited institution. When an academic program has different grade requirements, students must meet these minimum grade requirements.

3. Meet the particular admission norms of the academic programs for which admission is requested.

4. Meet the minimum grade point index indicated in the satisfactory academic progress policy of this University. All courses taken will be considered in determining the fulfillment of this requirement.

5. Not be under suspension for disciplinary reasons by their former institution.

6. Students, who have not taken courses in English, must present the PAA test result for placement in the different levels of English.

Students who have approved less than twelve transferable credits in the institution of origin, will be evaluated in agreement the norms applicable to applicants without university studies. If they are admitted, they will receive credit for the transferable academic work of the other institution.

Admission of Students from Other Educational Systems:

1. **Without University Studies**
Students from other educational systems with no prior university studies must present official evidence of having satisfactorily completed, in their country, secondary studies equivalent to graduation from high school in Puerto Rico.

2. **With University Studies**
Students with university studies must present official evidence of these studies. The University will evaluate the credentials to determine the student's eligibility to enter the academic program for which admission is requested.

Special Admission of Students not Interested in a Degree or Academic Title:

Students interested in taking courses totally through online education, but not interested in obtaining a degree or university title, must present evidence of having satisfactorily completed the secondary studies equivalent to the high school graduation requirements in Puerto Rico.

Documents Required for Registration

Students admitted to any of the Inter American University of Puerto Rico campuses must:

1. Submit an updated vaccination certificate if the student is under 21 years of age, with the exception of those who are interested in studying an online program from other countries.

2. Those students who wish to apply for financial assistance from federal, state or institutional funds, must complete the "Free Application for Federal Student Aid" (FAFSA), through the internet:

www.fafsa.ed.gov. (For additional information refer to the Financial Aid (p. 76) section of this Catalog).

3. Complete and submit required documents for compliance with legal or regulatory provisions.

4. The federal government requires you to complete IRS Form W-9. To validate the information, it is necessary to present the social security card. The University will not keep a copy of any student's social security card, it only has to be presented for verification purposes.

5. Pay the corresponding deposit if you wish to stay in one of the dormitories or residences available in the campuses.

Readmission to the University

Students who discontinue studies for one academic year or more, must request readmission at the Office of the Registrar of the campus to which they seek admission. Students who have a general average of 2.00 or more, will be exempted from the admission interview. The request can be processed through traditional means or through available electronic means. The Registrar Office, after analyzing the

official documents, will determine the student's eligibility for readmission, using the admission standards established by the Inter American University of Puerto Rico and the program of interest. In addition, the student will be evaluated by the current academic progress standard. The request must be made at least one month before the next enrollment period. Exceptions will be considered individually by the Dean of Academic Affairs.

Students who have passed courses at another institution of higher learning should present an official transcript of the credits taken. This evidence will be submitted to the Admissions Office for evaluation and possible validation of courses and the Office of Financial Aid for the evaluation of federal, state and institutional aid.

Students, who at the time of a readmission have completed 80% of the study program, may request an evaluation in agreement with the requirements of the program in which they were admitted initially. This provision will not apply to those students whose study program requires some specific certification or license in order to practice the profession. For all other academic or administrative processes, the student will be governed by the provisions of the General Catalog in effect at the time of his readmission.

Students interested in readmission to the University through the Services Program for Adult Students must comply with the requirements established in that section of this Catalog.

Readmission to the University of Veteran and Military Students

When a student with veteran and military status has discontinued the studies for one academic year or more, he/she must request readmission at the Registrar's Office of the academic unit to which is interested in being readmitted. Pursuant to regulations 34 CFR 668.18 (a) (e) and (g), the student will be readmitted with the same academic status as when he or she was last enrolled or admitted to the university. These requirements apply to any student who is unable to attend college due to military service.

The readmission process will entail the application of the institutional guidelines established by the University. In the case of students who have a general average of 2.00 or more, they will be exempt from the admission interview. The request can be processed through the traditional or electronic means available. The Registrar's Office, after analyzing the official documents, will determine the student's eligibility for readmission, using the admission standards established by the Inter-American University of Puerto Rico and the study program of interest. The request must be made at least one month before the next registration period. Exceptions will be considered individually by the Dean of Academic Affairs.

Students who have subsequently passed courses at other higher education institutions must submit an official transcript of the credits taken at these institutions. This evidence will be submitted to the Admissions Office for evaluation and possible validation of courses, as well as to the Financial Aid Office for the evaluation of federal, state and institutional aid.

Students who, at the time of readmission, have completed 80% of the study program, may request an evaluation in accordance with the requirements of the program for which they were initially admitted. This provision will not apply to those students whose study program requires any particular certification or license to practice the profession. For any other academic or administrative process, the student will be governed by the stipulations of the General Catalog in force at the time of readmission.

Honors Program

Philosophy and Objectives

The Honors Program of Inter American University is designed to achieve the maximum development of undergraduate academically talented students. The Program aims to attract students looking for an academic program that challenges and guides them by means of an interdisciplinary, leadership and critical thinking approach.

In this Program the University will make efforts to achieve that students assume greater responsibility for their learning through research and independent work. The faculty of the Program will plan learning experiences with an interdisciplinary and critical analysis approach that enhances the development of the student as an educated person.

The objectives of the Honors Program are:

- To identify talented students whose abilities, needs, interests and motivations are or require an attention different from those of the students of the regular program.

- To provide talented students interdisciplinary academic and leadership experiences of the highest quality that challenge their performance and allow them to work as independent learners by strengthening their research and critical judgment skills by means of multidisciplinary honor studies.

- To establish and foment an academic environment that stimulates talented students in their academic and leadership aspirations and promotes their total and integral development.

- Facilitate economic incentives based on academic merit.

Admission and Readmission

1. July 1 or the next workday for regular registration has been established as the deadline for applying for admission to the Program for the academic year, in academic terms beginning in August. Admission to the program is once per year. Students may be admitted in other terms, subject to the availability of funds.

2. First year students with a high school index of 3.50 or above and an admission index of 1,300 points or more will be considered for admission. Freshman students coming from high school will receive the invitation letter to apply for the Program along with their letter of admission to the University.

3. Second- and third-year students who have achieved a general index of 3.50 or more and meet the Satisfactory Academic Progress Standard in their term of studies immediately prior to applying to the program. Students who interrupt their studies in the Honors Program may be considered for readmission if they satisfy the Program's retention requirements and submit a readmission request letter.

Transfer students who meet the criteria for the honors program may apply for admission. The coordinator or director of the Honor Program will request the honor file from the university of origin.

4. Transferred students that meet the criteria of second year students may request admission to the Program. However, the academic file of the university of origin will be used.

5. All candidates for admission or readmission must present to the Program coordinator or director the required documents listed below. The coordinator or director will evaluate the application and, if necessary, require an interview with the candidate.

   a. Application

   b. One (1) letter of recommendation from a professor or teacher

   c. Answers to guide questions

   d. Certification of commitment to participate in co-curricular and student development activities such as: student organizations, leadership activities, internships, exchanges, academic, cultural, sport, religious, and service to the community activities and others.

Retention

To continue the classification as an Honors Program student, students must meet the following requirements in each academic term:

1. Pass the courses of the Program with a grade of B or above.

2. Maintain an overall grade point index of at least 3.50.

3. Continue in and pass 100% of the academic load in which they are registered.

4. Approve at least six (6) credits per year in Program courses, unless these have not been offered.

5. Complete the Evaluation of Participation by Term form and present documentation showing their participation in co-curricular and student development activities in the interview for renewal of the scholarship.

6. Cases presenting special circumstances will be evaluated by the coordinator/director of the Program and, if necessary, by the Program Advisory Committee. The final recommendation will be presented in writing to the dean of academic affairs for approval. Authorization to continue in the Program as an exception does not necessarily include the student's eligibility to receive the economic incentive.

Academic Privileges

Students of the Honors Program will have the benefit of the academic privileges enumerated below.

1. An economic incentive of the Honors Program for the tuition payment related to the requirements of the degree to which they aspire, and in accord with the incentive level they are eligible for.

2. A 15% discount in registration costs in continuing education courses while they are active in the Program and up to one year after having graduated with a bachelor's degree.

3. Learning experiences such as: individual research, portfolios, seminars, special topics, educational cooperation, experimental courses and special projects.

4. An indication on their official transcript that they belonged to the Program.

5. Preferred treatment in the registration process.

6. A special identification as Honors Program students.

7. Recognition at graduation, achievement night and at other activities in which academic performance is recognized.

8. The same benefits as graduate students in regard to their use of the Information Access Center.

9. An invitation to special academic activities of the campus and, as far as possible, of the University.

10. An invitation to participate in the Program of study trips, internships and in activities of academic development promoted by the academic units and the Vice Presidency for Academic and Student Affairs and Systemic Planning.

11. When students graduate from the University, an annotation will appear in their academic file indicating a distinguished graduation for having belonged to the Honors Program.

Curriculum

1. The Honors Program offers students multidisciplinary studies among the following curricular alternatives:

    a. To take the General Education, major and elective courses that are offered under this Program.

    b. To take courses designed for the Honors Program as well as seminars that offer cultural, leadership and interdisciplinary academic experiences that enrich their curriculum as well as their integral development.

    c. To take courses leading to a minor in honor multidisciplinary studies, by campus.

2. Honors Program courses will be offered in separate sections identified and designed so that students may develop their potential to the maximum through experiments, real life situations, essays, creative projects, monographs and reports. These courses will promote individual research with an interdisciplinary focus, critical analysis and learning through co-curricular and student development experiences.

3. Students planning to begin a master's degree who have completed more than 90 credits of their bachelor's degree may take graduate courses if they meet the requirements of the program they are applying for. However, these courses will not be covered by the Program economic incentive.

4. Students must take a minimum of six credits per year in Honors Program courses if the courses are offered.

5. All Honors Program courses approved by students will be counted towards the degree they are pursuing. For this purpose, the mechanisms of validation, course substitution or official authorization will be used, as may be appropriate.

6. Courses with a grade lower than B will not be considered for the purpose of certifying the approval of 12 credits in Program courses in the academic record.

7. Experimental course may be created for the Honors Program.

8. Other students not belonging to the Honors Program may enroll in the sections reserved for this Program if they qualify for the course. However, they must have prior authorization of the coordinator/director of the Program or of the Department Director.

Description of the economic incentive

The economic incentive of the Honors Program is awarded in agreement with the following levels:

1. Freshman students:

Level I	**Basic Incentive:** for elegible candidates who have an admissions index of 1,300 to 1,349.
Level II	**Superior Incentive:** for elegible candidates who have an admissions index of 1,350 to 1,399.
Level III	**Extraordinary Incentive:** for elegible candidates who have an admissions index of 1,400 to 1,600.

2. Sophomore and Junior students:

Level I	**Basic Incentive:** for elegible candidates who have a general grade point index of 3.50 to 3.79.
Level II	**Superior Incentive:** for elegible candidates who have a general grade point index of 3.80 to 3.90.
Level III	**Extraordinary Incentive:** for elegible candidates who have a general grade point index of 3.91 to 4.00.

3. The amount of the economic incentive in each level is as follows:

Level I	**Basic Incentive:** tuition payment for three (3) credits of an Honors Program course, in the academic terms indicated.
Level II	**Superior Incentive:** payment of six (6) credits in a registration of at least 12 credits, which includes an Honors Program course.
Level III	**Extraordinary Incentive:** payment up to a maximum of 12 credits of the registration, which must include an Honors Program course.

To retain eligibility for the economic incentive, students must maintain the grade index established for the incentive level they are in.

The evaluation for the eligibility of each student to continue in the incentive level will be conducted at the end of each term of the academic year by the coordinator/director of the Program. The academic year is divided into two parts: the first includes the terms that end between August and December; the second includes the terms that end from January to May.

Students must complete their course of studies within a period of time that does not exceed six (6) years.

Services Program for Adult Students (AVANCE)

Adult Student Services

The adult population presents characteristics, needs and interests different from the regular traditional population. The campuses will provide the professional counseling services and the academic advisement that responds best to the realities of this population. Newly admitted students will have interviewing services available as well as orientation by a professional counselor or by the person in charge of the AVANCE Program, in order to identify their needs and priorities and to refer them to the programs and services that will facilitate their integration to university life. Following are the norms that will be observed in the administration of these services.

1. Orientation

Orientation is the link between the promotion and admissions processes, curricular development and the academic offerings and is therefore an essential component of the Program. The campuses will offer the professional counseling services to the adults, at their most convenient daily and hourly schedules.

2. Academic Advisement

The campuses will offer the services of academic advisement to the adults, through available means and at their most convenient daily and hourly schedules.

3. Schedule of Services

In order to take care of their needs properly, an effective strategic planning is required in all campuses with regard to personnel use. In this way, services of optimal quality in teaching and academic management will be guaranteed, as well as in the offices of the Registrar, Bursar, Financial Aid, Orientation, Admissions and others.

4. Academic Calendars

Courses may be taken in the calendars established by the campuses for the regular terms, the summer sessions and the special sessions of October and March.
Students, who have registered in the terms beginning in August or January, may complete or increase their academic load by adding courses in other sessions or terms, even though they may be studying simultaneously in two academic sessions, provided they do not exceed the amount of credits approved by their academic adviser.

Study and Learning in AVANCE

1. Students of the AVANCE Program may register in courses of the different study programs offered by the University.

2. The AVANCE Program makes available to adults several flexible forms or study alternatives, thus facilitating the possibility of taking courses through the regular modality and other nontraditional modalities of study, including among others: study by contract with support of the Web, courses totally online, and combined study.

3. Educational activities will be conducted with suitable resources that facilitate and stimulate the learning experience, in which the professors can effectively develop the adult student classes. Each campus will provide support services that will assure the best conditions for the academic achievement of the student.

The Services Program for Adult Students offers a system of flexible admission, validation of experiences, diverse modalities of study and individualized attention to the adult population that undertakes post-secondary and university studies. In this way, AVANCE recognizes the continuous changes in society, the professional challenges and the need to enrich the continuous learning of adults.

AVANCE visualizes adult education as a process in which participants can face the challenges of employment, including self-employment, enhanced by a self-directed university experience.

The Program offers adult students the opportunity to:

1. Acquire necessary experiences that stimulate personal development and strengthen adult citizen development.

2. Promote learning experiences by means of special study sessions, flexible schedules and a diversity of academic terms, through the use of nontraditional curricular modalities, such as online courses, combined courses of study and study by contract with *Web* support.

3. Offer validation of learning experiences by means of written tests, proficiency tests and portfolio.

4. Update, expand and reorient their professional education beyond the academic degrees they already have.

5. Have the means for the acquisition of an academic degree that aims to enable the adult in the performance of a profession in accord with the demands of the present world.

Admission of New Students to AVANCE

Students, who do not have university experience and request admission to the program, must comply with the following requirements:

1. Be at least 21 years old or be legally independent, as demonstrated by means of an official and valid document (copy of the Birth Certificate, copy of the Liberation Document, copy of Marriage Certificate or copy of a document issued by some pertinent agency).

2. Submit an official document issued in any tangible medium that serves to certify that the student has completed the high school graduation requirements.

The chancellors shall use administrative procedures and strategies that assure that the institutional commitment to offer students the necessary services while attending the University, are met. The adequacy, effectiveness and efficiency in offering these services contribute to improve learning, a higher retention rate and a good image in the community.

Changes from the Regular Program to the AVANCE Program

Active students of the regular programs, who wish to change to the Services Program for Adult Students of Inter American University of Puerto Rico, must meet the following requirements:

1. Be at least 21 years of age or be legally independent at the time they request readmission. This must be demonstrated by an official and valid document (copy of the Birth Certificate, copy of the Liberation Document, copy of Marriage Certificate or copy of a document issued by some pertinent agency).

2. Meet the Satisfactory Academic Progress Norms. Students whose general average is less than 2.00 must also receive orientation from an adviser designated at the unit.

Placement Tests for AVANCE Students

1. Students who have not taken the PAA test from *College Board*, will be given a placement test in English. This will determine the level of the English courses in which the student must register.

2. Transferred and re-admitted students that do not present evidence of having passed English will be given a placement test in this subject, unless they present the test results of the PAA.

3. The preparation of the placement test in English will be coordinated by the Vice-presidency for Academic and Student Affairs and Systemic Planning.

Readmission of Students Requesting a Change to the AVANCE Program

Regular students who have interrupted their studies for one year or more may be re-admitted to the Services Program for Adult Students of Inter American University of Puerto Rico, if they meet the following requirements:

1. Be at least 21 years of age or be legally independent at the time they request readmission. This must be demonstrated by an official and valid document (copy of the Birth Certificate, copy of the Liberation Document, copy of Marriage Certificate or copy of a document issued by some pertinent agency).

2. Comply with the academic progress requirements. Students, who have a grade point index of 2.00 or less, must in addition, receive orientation from an adviser designated in the unit.

Declaration of Major by AVANCE Students

Students admitted to the AVANCE Program will make their declaration of major at the time of their admission. For all the official purposes, students of the AVANCE Program will strictly observe the Satisfactory Academic Progress Norm established in the General Catalog of Inter American University of Puerto Rico.

Online Education

Inter American University of Puerto Rico recognizes that technology and information systems are essential in the transformation of experiences that promote learning. Likewise, they are strategic components of the institutional infrastructure for supporting academic development and facilitating management. In harmony with the Vision statement, Inter American University is moving toward the transformation of the teaching and learning processes by developing new educational emphases through the incorporation of technology. Students will assume more responsibility for their learning, the faculty will become facilitating agents and the curriculum will be made more flexible with multiple modalities.

In this way, the Institution increases the extent of its academic programs, maximizes its resources, reaches beyond the limits of the traditional classroom and promotes and provides new alternatives for continuous education.

Objectives of Online Education

1. To utilize technology as an instrument to increase and strengthen the University Mission in its global context.

2. To develop new approaches so that students may assume greater responsibility for their learning and faculty may become better facilitating agents of the learning process.

3. To share and maximize academic programs and institutional resources beyond the limits of the Campuses.

4. To promote equal opportunity for information access beyond the limits of time and space.

5. To increase the student population to which Inter American University offers academic programs.

6. To facilitate the establishment of collaborative agreements and consortia with other educational institutions in and outside Puerto Rico with the purpose of strengthening and sharing academic offerings.

7. To strengthen and enrich developmental programs and professional update.

8. To meet the particular needs of students with disabilities.

9. To meet the multiple needs of a heterogeneous student population.

10. To meet the particular needs of the adult population.

11. To extend institutional services beyond geographic frontiers.

Technologies and Media Used in Online Education

Online Education uses diverse technologies for the transmission of video, voice and data, thus, making possible a teaching and learning process beyond the limits of time and space. There are a variety of courses that differ in the means used to achieve teaching objectives, the teaching process for promoting the development of concepts and skills, the degree of interaction between faculty-student and student-student, and the assessment and certification of learning.

Tuition, Fees and Other Charges

Information related to registration fees, fees and other charges is published in the Costs Bulletins, which are available in the "Documents" section of the University portal, which can be accessed through www.inter.edu or http://documentos.inter.edu/.

Institutional Policies and Procedures of Return of Funds Applicable to Students with a Total Withdrawal

The Policy for Return of Funds is applicable to all students that pay their registration in cash, with financial aid under Title IV Programs, or from other state or institutional programs or from health allied programs or with any other payment method and who officially withdraw from all courses, stop attending class, never attended class or are expelled from the University.

Return of Funds to Title IV Programs

1. Students who officially withdraw: To determine the applicable percentage the last date of withdrawal up to 60% of the term will be used.

2. Students who stop attending class: The Policy for Return of Funds will be applied up to 60% of the term with a refund equivalent to 50% of the assigned funds.

3. Students who never attended class: One hundred percent (100%) will be refunded.

Student Financial Aid

The University awards financial aid, within the limitations of available funds, to students who meet the specific requirements established by those offering the aid. Applicant eligibility for such aid is reviewed each academic year.

The Free Application for Federal Student Aid may be completed via Internet at https://studentaid.gov/

Inter American University of Puerto Rico will use the results from the Free Application for Federal Student Aid to award federal, state and institutional funds to eligible students

Military service personnel, veterans and other qualified individuals may use their Veterans' benefits under the applicable legislation. Information on these programs may be obtained from the Department of Veterans Affairs' Website or in the Registrars' Offices in the campuses.

Persons interested in detailed information concerning the eligibility requirements and the evaluation procedures used for applications should refer to the Student Financial Aid Manual and/or visit any Financial Aid Office.

Financial Aid funds originate from different sources: The United States Government (Federal Funds), Government of the Commonwealth of Puerto Rico, Inter American University and private entities.

Students who opt for a second major not within their academic program are not eligible for the Federal Pell Grant, Federal Supplemental Educational Opportunity Grant (FSEOG) and some state programs although they have not requested graduation.

Federal Funds

Maximum Time Requirements for Federal Financial Aid

The period of time for which students are eligible to receive financial aid from federal sources depends on the duration of the program of studies as defined by the University. For this purpose, the University has determined the duration of its programs according to the number of credits they require. Students must complete their program of studies within a time period that does not exceed 150% of its duration. The courses considered in this percentage are those required by the selected program. Students also accumulate time for transferred credits.

Eligibility for the Federal Pell Grant expires when students complete the academic requirements for a first bachelor's degree.

Upon finishing the second year of study, students must maintain a minimum grade point index of 1.50 as a requirement to receive federal financial aid.

Students will have 6 years registered full-time or 600% of the eligibility time for the Federal Pell Grant to complete the requirements of their study program. The time already used in any eligible institution counts to determine the eligibility of the **Life Time Eligibility Used** of the Federal PELL Grant.

The maximum time of eligibility to receive the Subsidized Direct Federal Loan will be equal to 150% of the duration of the study program in which students are registered. The 150% is also accumulated by previous programs for which payment of the subsidized loan was received.

Federal Pell Grant

This program was instituted by the United States Government as the basis for student financial aid programs. The original name was Basic Education Opportunity Grant (BEOG). Students may request this by Internet www.fafsa.ed.gov.

In order to submit the request, students must:

1. Students, from their home or in the campus of their preference, will request the FSA ID. This is the password that will allow them to process the request for federal financial aid FAFSA. To acquire this identification, they must enter the Internet page WWW.FSAID.GOV https://fafsa.ed.gov/ or through the page FSA ID and select the link FSA ID.

2. After acquiring their identification, students will complete the request for federal financial aid FAFSA through the Internet page **https://fafsa.ed.gov/.** During the process they will select the code of the campus of Inter American University in which they will study. The University will electronically receive the information on the eligibility of the applicant, will produce the Institutional Student Information Record (*ISIR*) and will communicate with the applicant. This form is advantageous because the process is made agile, errors are avoided and the applicant does not

have to wait for the mail. Normally the answer is received in Inter American University within 72 work hours after having transmitted the request. In this manner the process is made agile because:

a. The Free Request for Student Federal Aid is available by Internet and can be completed from the comfort of the home.

b. It is not necessary to wait for the mail.

c. If the request is not approved or if information in the approval process was assumed, the Director of Financial Aid is prepared to help and can communicate with the student. The Office of Financial Aid corrects the error in electronic form.

d. If the request is approved, when the students select courses for registration, the letter offering aid is prepared.

e. The process of registration payment is faster. In fact, it can be by mail.

3. Upon receiving the answer of the request for federal financial aid, the system automatically determines the amount for which the participants will receive considering the Educational Cost, the Academic Load and the Family Contribution expected.

Federal Supplemental Educational Opportunity Grant (FSEOG)

Inter American University of Puerto Rico distributes this grant to students who have not completed any Bachelor's Degree. Awards go first to students with exceptional need. Priority is given to Pell Grant recipients.

Federal Direct Loans

The Federal Direct Loans Program offers both subsidized and unsubsidized loans. Subsidized loans are awarded on the basis of financial need and the federal government pays interest on the loan until the borrower begins to pay and during periods of authorized deferment. Unsubsidized loans are not awarded on the basis of need and interest is charged from the time the loan is disbursed until it is paid in full. Unsubsidized loans may not exceed the family contribution or the cost of education, whichever is less, within the limits established by the Program.

For the Federal Direct Loans program, students should apply directly to the University. After the full Free Application for Federal Student Aid (FAFSA) is reviewed

the University will inform students of their loan eligibility. Students must be enrolled in an academic load of at least six credits.

If students are dependent students who have not graduated or independent students who have not graduated, they can borrow up to:

• $5,500.00 in a combination of subsidized and unsubsidized loans if they are first-year students enrolled in a program of study that is at least a full academic year in length. Up to $3,500 may be in subsidized loans.

• $5,500.00 in a combination of subsidized and unsubsidized loans if they have completed their first year of study and the remainder of their program is at least a full academic year in length. Up to $3,500 may be in subsidized loans.

• $7,500.00 in a combination of subsidized and unsubsidized loans a year if they have completed two years of study, and the remainder of their program is at least a full academic year in length. Up to $5,500 may be in subsidized loans.

Federal Work-Study Program (FWS)

The funds provided by the Federal Government to this Program are augmented by funds contributed by Inter American University unless the Institution is exempt from this requirement. Participants are assigned employment for which they receive compensation, which contributes toward payment of their educational expenses. When possible, students are assigned work related to their field of studies.

Commonwealth of Puerto Rico Funds

Grants for these funds depend upon the annual allocation that the Government of Puerto Rico makes for these purposes and different scholarship programs are created by law for the following postsecondary students:

1. Scholarships Program for Specific Academic Areas

2. Scholarship Program for Academically-Talented Students and other Financial Aid Initiatives for Post-Secondary Students with a grade point average of at least 3.00 at the time of starting participation in the Program. Have an annual family income as established by the Puerto Rico Council on Higher Education for the corresponding year.

3. PROGRESAH, a program for honor students in their third or fourth year that have at least a 3.75 grade point average.

The Financial Aid Office of each campus is prepared to offer information regarding the eligibility requirements of these programs.

Institutional Funds

The University designates an amount of institutional funds every year in order to grant scholarships to students with economic needs. Those funds are also used to take care of exceptional student situations. The availability of these funds depends on the budget adopted annually for those purposes.

Institutional Scholarship

The Institutional Scholarship is granted to eligible students who have economic need, as determined by the University.

Institutional Work-Study Program

Employment is assigned to the participants, for which they will receive a wage that will allow them to pay part of their educational expenses. Insofar as possible, the work assigned to students will be related to their field of studies.

Scholarships Granted in the Campuses

Student Activities Scholarship

This scholarship is administered by the Student Council of each campus. It is aimed to take care of special needs. The funds for this scholarship come from funds raised from activities carried out by the Student Council.

Choir, Tuna, Theater and Band Scholarship

This scholarship provides stipends to students participating in any of these extracurricular activities. This will depend on the availability of funds.

Special Fund Scholarship

This special fund aims to take care of the economic need of students who have depleted their eligibility for the Federal PELL Grant and who still have a semester or trimester to complete the requirements of their program.

Incentives of the Honors Program

Students belonging to the Honors Program qualify to receive an economic incentive, based on their academic performance and subject to the availability of funds of this program in each campus. The amount of the incentive awarded is to cover the partial or total cost of the credits in which the student is registered, and depends on the level to which the student belongs. The three established levels are described in the section of the Honors Program of this Catalog.

Engineering Scholarship

The Bayamón Campus has a special scholarship fund for engineering students. This is known as the Honor Engineering Scholarship and has the objective of recruiting new talented students to the Bayamón Campus. The School of Engineering of the Campus can provide information on the eligibility requirements of this Scholarship.

Athletic Scholarships

Inter American University assigns funds annually to offer athletic scholarships to eligible students who stand out in their abilities in sports. Institutional financial aid may be used to pay for studies and other expenses as provided by the Interuniversity Athletic League (LAI) regulations, and to the extent to which the economic resources permit.

Student athletes who, in addition qualify to receive federal or state financial aid, must meet the current requirements and regulations to receive this aid.

Student athletes recruited by the athletic department of IAU must meet the following requirements to receive financial aid for their participation in athletic activities:

1. Be full-time students of Inter American University.

2. Be recruited or recommended by a member of the team of trainers, in harmony with the required minimum mark or level of achievement established by the Institutional Athletic Director, in consultation with the coordinators in the academic units.

3. Comply with the satisfactory academic progress norms, as established by the institutional norm of IAU and by the regulations of the LAI.

4. Accept the financial aid that is offered.

Scholarships Granted by the Vice-

presidency for Academic Affairs

Scholarship for Participation in Co-curricular and Extracurricular Activities

Annually, the Vice-presidency for Academic and Student Affairs and Systemic Planning (VASASP) grants student scholarships for participation in co-curricular and extracurricular activities. The objective is to foment student participation in seminars, congresses, lectures and co-curricular projects (associations, artistic groups and institutional teams, among others). This financial aid will cover expenses of air and ground transportation, lodging and diets. Nevertheless, personal expenses, educational equipment and materials may not be paid for with these funds. The scholarships that are granted will be subject to the funds available annually in the VASASP.

Scholarship for Projects of Internationalization and Exchanges

The Vice-presidency for Academic and Student Affairs and Systemic Planning (VASASP) grants scholarships for internationalization and exchange projects. The objective of these is to partially finance development academic-professional projects, such as internships, leadership studies and student initiatives offered outside Puerto Rico. These scholarships are awarded to both undergraduate and graduate level students.

Academic Scholarship

The Vice-presidency for Academic and Student Affairs and Systemic Planning (VASASP) grants the Academic Scholarship to provide partial financial aid to ex-students of Inter American University of Puerto Rico (IAUPR) with high academic achievement. The objective of this scholarship is to help students who aspire to complete graduate studies or professional studies in masters or doctoral level programs offered at IAUPR.

The financial aid must be used to cover part with the costs of registration of the graduate courses in which the student registers. The scholarship establishes a minimum of **$1,000** and a maximum of **$1,400** annually, payable in two installments. The amount of the scholarship granted will depend on the available funds.

Presidential Scholarship

This scholarship is administered by the Office of the President and is used to take care of worthy cases with extreme economic needs. The eligibility criteria are established by the Office of the President. Each case is evaluated individually by the president.

Norms and Services Related to the Office of the Registrar

The Office of the Registrar is responsible for registration, maintenance of all official academic records of students, the issuance of transcripts and certification of studies and certification that students have met graduation requirements. It also issues study certification upon student request. There is an Office of the Registrar at each instructional unit of the University. Forms requesting services of the Registrar are also available through Internet.

Registration, Program Changes and Partial Withdrawal

Students will register on the day and hour designated for this purpose. After registration, students will be able to make changes to their class programs during the period specified in the Academic Calendar.

1. Program modifications during the period of changes: To add or drop a course or change a course section during the period of change designated on the Academic Calendar, students should complete a change-of-program form or submit their petition for a change through electronic media. This should be presented or sent to the Office of the Registrar to be officially processed.

2. Dropping courses: After the period of program change has ended, a student will be able to drop one or more courses (partial withdrawal or total withdrawal). For partial withdrawal, the student will first consult the professor of the course and will present a completed partial withdrawal form to the Registrar's Office. For total withdrawal from the University, please consult the section "Withdrawal from the University" of this Catalog. Student may drop a class or completely withdraw from the University until the last day of class as established in the Academic Calendar.

3. When a student stops attending a course, and does not qualify for the grade of Incomplete or F, the professor will enter the symbol **UW** in the column "Grade" and will indicate the student's last date of class attendance or the student's last activity related to the course in the column "Last Attend Date", following the format of the BANNER System: DD/MM/YYYY (day, month, year).

4. All students, who have not attended class or participated in an academic activity related to the course during the first weeks of class, according to the stipulated date in the appropriate academic administrative calendar, will receive, from the professor, the administrative annotation AW. (Refer to the section Class Attendance (p. 82) of this Catalog).

Audit Students

Students who wish to register in courses as audit students must do this during the registration or the class program change periods.

Withdrawal of a Course from the Class Schedule

The University will make every reasonable effort to offer courses as announced, but it reserves the right to withdraw a course from the schedule, when it is deemed necessary.

Intra-University Transfers

Students wishing to transfer from one campus to another must meet the admission norms of the program they are requesting. Student will notify their intentions to the Office of the Registrar of the campus to which they wish to transfer. The Office of the Registrar must verify that the student does not have restrictions in the system, such as: debts, incomplete documents or other restrictions before completing the transfer.

University Policy Regarding Students and Alumni Directory

The University, in compliance with federal law "Family Educational Rights and Privacy Act (FERPA), provides students and alumni access to their academic files, the right to request that the information contained in those files be amended and certain control over the disclosure of academic information.

1. Students and alumni have the right to inspect and review their academic files. They may request this in

writing to the file custodian and indicate the file they wish to review. The file custodian will make the necessary arrangements so that the student or alumni may review the files within a period of time no greater than 45 days from the date in which the student or alumni presented the written request. If the person receiving the request from the student or alumni does not have the file, this person will indicate the correct place for the request to be presented.

2. Students and alumni have the right to request that incorrect information contained in their academic files be corrected. Interested students or alumni must present a written request to the University official in charge of the file, indicate the part of the file to be corrected and explain the mistake. If the University decides not to correct the file, the student or alumni will be notified of this decision in writing and the person will be informed of the right to request an informal hearing.

3. Students or alumni have the right to prevent the University from disclosing personal information found in the academic files, except in those cases where FERPA authorizes disclosure. These cases include the following:

   a. Disclosure of information to Institution officials. Institutional officials are taken to mean administrative or teaching employees, persons contacted by the University, members of the Board of Trustees and student members of special committees.

   b. Disclosure of Directory information. The University has designated the following data as Directory information: student or alumni name, address, major and year of study. Students and alumni have the right to prevent the University from disclosing Directory information to third parties. The disclosure to third parties includes the release of information to the Armed Forces. If students or alumni wish to prevent their information from being disclosed to the United States Armed Forces, it is necessary that they express their desire that no information be disclosed to third parties. To prevent information from being disclosed to third parties, it is necessary that students or alumni submit their request to this effect, in writing, to the Office of the Registrar of their academic unit. In order for the request to be effective for the academic year, it is important that students submit the request in or on September 1st of that year.

   c. Information to other universities. The University will release student or alumni information to those universities to which they request admission.

   d. Exceptional circumstances. The University will disclose student or alumni information if they are economically dependent upon their parents. The University assumes undergraduate students and alumni are economically dependent upon their parents; therefore, in some cases it may disclose information without the consent of the student or alumni to parents that request it. Undergraduate students or alumni who are not economically dependent upon their parents must present this evidence to the Office of the Registrar to prevent information from being released to their parents. Information on graduate students or alumni will not be given to parents without their consent.

   e. Emergency cases. These are cases in which the health or security of a student, alumni or other person is in danger.

   f. Immigration and Naturalization Service. The University is obliged to give information to Immigration Service regarding certain foreign students or alumni.

If students or alumni believe that the University has not complied with these obligations, they have the right to file a claim to Department of Federal Education, Family Policy Compliance Officer, 400 Maryland Avenue SW, Washington D.C. 20202-4605.

Solomon-Pombo Act

Inter American University established its institutional policy regarding the student and alumni directory for the academic year 1999-2000. This measure was adopted to incorporate the new changes in the federal laws known as the Solomon-Pombo Act. This federal law permits third parties to request from the Institution all personal data that is included by the University as Directory information.

Inter American University establishes the following data as Directory information:

   Name
   Major
   Address
   Year of study

The University exhorts all students not in agreement that these data be included in the Directory to contact the Dean

of Academic Affairs of their Campus.

Student Records

Any student who wants information related to their academic records or the sending of credit transcripts, must contact the Registrar's Office of the campus in which they were enrolled.

At the end of each academic term, students will review the grade reports available on the Inter Web. Any student who believes that errors have been made in these reports must notify the corresponding Registrar's Office, in writing. The deadline to complete the grade change request or submit any claim related to the grade reports will be the one established for withdrawals with annotation W from the subsequent academic term of the same nature.

Student Academic and Personal Files

Student academic and personal files are confidential and the release or handling of information contained in them is limited to certain faculty and administrative personnel who, in the regular performance of their functions, have to work with these files. Once the documents required by the University are received, they become the exclusive property of the Institution. Students have the right to examine their academic or personnel file at any moment in the presence of an official of the Office of the Registrar. They may not make copies of the documents contained in their files, except in the cases explained below.

The information contained in the academic files may be released to parents of dependent students. Parents must present evidence of their condition as father or mother, as well as the dependency of the student through the presentation of relevant documentation. The information contained in the academic or personal files may not be released to students' parents in any other cases.

The release of information contained in the academic or personal files of students to third parties, to any type of institution, to government or judicial agencies will only be made with written authorization from the student or in compliance with an order to this effect issued by the competent authority.

Transcripts, study certification and certification of degrees are available to students who may obtain them in the Office of the Registrar. The cost of each transcript is published in the Official Institutional Cost Bulletin.

Transcripts requested for transfer to another educational institution, for continuing graduates' studies, completing the requirements of certifying agencies or for the purpose of employment are sent directly to the address provided by the student in the request. In no case will transcripts requested for these purposes be delivered to the student.

The request for transcripts by students whose files are active will be processed within a reasonable time that under normal circumstances should not exceed ten days from the date on which the request was received in the Office of the Registrar. The requests for transcription of students whose files are inactive require a longer time to be processed.

Change of Address

At the moment of registration, it is required that students submit their mailing address to the Office of the registrar. If a change of address is required, students must visit this office or they will make the change by using the self-service of BANNER (Inter Web). If they do not maintain this address updated, the University will not be responsible for the notifications sent to the students.

Any notice, official or otherwise, mailed to a student's address as it appears on the records shall be deemed sufficient notice.

Class Attendance

Regular class attendance and meeting the requirements established for courses offered by non-traditional modalities are considered by the University as essential elements of the educational process. For this reason, class attendance is required of every student registered in courses requiring their presence and in online education courses. Class attendance is defined as the presence of the student by means of an official communication with the professor, as has been determined, to carry out an academic activity related with the course. In the same manner, the fulfillment of requirements is compulsory for all courses offered by non-traditional modalities. Student participation in institutional activities will be considered a valid excuse for not attending class. Students are responsible for completing course requirements as stipulated in the course syllabus.

Students, who during the period established in the academic calendar, have never attended a course, will be dropped administratively. This includes courses offered by nontraditional modalities. The professor will identify in final grade in the electronic registry, the students who have

never attended or participated in an activity academically related to the course. The annotation AW will be used to identify these students. For administrative purposes, these administrative drops will be considered the same as withdrawals requested by the student, as established in the Adjustments and the Reimbursements section. Inter American University requires its faculty to report the last day of attendance, or of any other course-related activity of students who stop attending class in each academic term. For this, the faculty must keep a record of class attendance of the students, or of their participation in the other activities of the course. The faculty will access the list of students in their courses in Inter Web and will assign UW to every student that has stopped attending class and will write the date of the student's last day of attendance or his last academic activity of the course, without having withdrawn officially, see the section of Administrative Action Symbols (p. 85), UW.

The last date of class attendance will be used to determine the applicable refund for students who stop attending class without officially withdrawing. This arrangement is established in harmony with University regulations.

Study in Other Institutions of Higher Education

Students desiring to take courses in other institutions of higher education either in or outside of Puerto Rico must obtain previous authorization from the dean of academic affairs, who will evaluate the description of the courses to be authorized in the other institution to ascertain their equivalency with the requirements of this University. A maximum of 15 credits may be authorized for a Bachelor's Degree and 9 for an Associate Degree. The authorized credits obtained will be considered as Inter American University credits for all purposes. Courses will not be authorized for students who have transferred from other institutions with 90 or more credits.

Declaration of Major

Students will declare a major in one of the programs offered by the University when applying for admission to the University. Once they are admitted, students will receive appropriate professional and academic guidance related to the program of their interest from either the Center for Professional Orientation or from the academic department, as the case may be.

The declaration of a major does not imply admission to a program. The admission to a program depends on whether the entrance requirements of the program are met. Students who declare a major in a program that is not offered at the campus to which they were admitted must transfer to a campus that offers it to complete the degree.

Declaration of Minor

Minor

It is the set of related courses that complements the student's academic program. Its purpose is to provide students with the opportunity to explore areas of personal and professional interest, different or complementary to their study program. The student must declare the minor, derivative or particular concentration, authorized in the current General Catalog, during their main or major concentration studies. The University will certify a maximum of two minor concentrations. These are not allowed in associate degrees and do not lead to college degrees.

Only students admitted to the University who have declared their baccalaureate program of interest can declare the minor. Any declaration of a minor concentration will require the approval of the academic advisor or the director of the department of the academic unit that offers the minor concentration. This statement must be made prior to the application for graduation.

The student must complete the requirements of the minor concentration, before or at the same time that they will complete the requirements of the degree. If a student has completed the requirements of their study program, they will not be able to declare a minor concentration.

A minor concentration will consist of a minimum of 18 credits and a maximum of 27 credits.

A minimum grade of C is required in the minor concentration courses for the corresponding certification. The student will meet the satisfactory academic progress standard, the retention standard, if applicable, and the maximum time allowed to complete their study program.

If the student wants the minor concentration to appear certified in his transcript, he must formally opt for it, by filing the appropriate form, in one of the campuses authorized to offer the degree. The student must take at least one course at the campus certifying the minor concentration.

The courses that belong to an academic program that requires taking a revalidation to practice the profession should not be used for a minor concentration, if this

interferes with the requirements of that certification.

Change of Major

Students interested in changing their major must fill out the corresponding form and send it to the Office of the Registrar.

Official Total Withdrawal from the University

Students who decide to totally withdraw from the University must report to a professional advisor, who will orient them on the process. The student will have to fill out the Form of Official Total Withdrawal and sign it on the date in which they wish to initiate the process.

Then, they must secure the endorsements of the financial aid officer and the bursar and, finally, submit the Form to the Office of the Registrar so that the official total withdrawal is processed in the system. The date of effectiveness of the total withdrawal will be the date on which the student initiated the process.

Online Education students will have to communicate with the professional advisor, by means of e-mail, to inform their decision to totally withdraw from the University. They will have to indicate their student number, their complete name and the academic term from which they wish to withdraw.

The professional advisor will fill out the form with the information provided by the student and will submit it, along with the copy of the received e-mail, to the Management of Registration Services. The date of effectiveness of the total withdrawal will be the date on which the student sent the e-mail.

Student Course Load

A regular or full-time course load is 12-18 credit hours per term, whether these are semester, trimester or bimester. Students may not take more than 18 credit hours per term, unless their overall grade point index is 3.00 or higher. In order to take more than the number of credits permitted, students must have the written consent of their advisor and of the dean of academic affairs of their campus. Students on academic probation because of an unsatisfactory grade point index are limited to a program of 12 credit hours per term.

During each of the four-week summer sessions, students may enroll for a maximum of two courses provided that

the number of credit hours does not exceed 7 per session.

Students who register without written authorization for credits in excess of the maximum stated above in any academic term shall receive credit only for authorized credits and shall forfeit payment made for unauthorized credits. In such cases students shall choose the courses for which they wish to receive credit. Students are classified as full-time or part-time according to the number of credits they are enrolled in. Under the semester and trimester calendars these classifications are as follows:

> Full-time - twelve or more credits.
> Three-fourth-time - from nine to eleven credits.
> Half time - from six to eight credits.
> Less than half time - five or less credits.

Repeating Courses

Students will have the right to repeat courses when not satisfied with their grades. Student will pay the repetition of courses with their own money unless the federal and institutional regulations allow the granting of financial aid. In case a course is no longer offered at the University, it will be substituted with the new course created in the curricular revision or with an equivalent course approved by the Vice-President for Academic and Student Affairs and Systemic Planning. The highest grade and its corresponding credits will remain on the student's transcript and lower grades will be changed to an R (repeated) course. When students repeat a course and obtain the same grade as in the previous term, the grade of the most recent term will appear on the transcript. The administration action symbol R and its corresponding credits will not be considered in determining if a student has satisfied the graduation requirements. Courses repeated after graduation are not considered in the computation of the graduation grade point index.

Grading System

In harmony with the score obtained by students in each course they take, Inter American University of Puerto Rico normally uses the following scale to award their grades:

Score	Grade
100-90	A
89-80	B
79-70	C
69-60	D
59-0	F

There are other grading scales for certain academic programs and for certain courses.

Course grades indicate the degree of student achievement in any given course. The University has established a quality point system to be used in accumulating and summarizing these grades. This quality point system is used to determine the minimum degree of general competence for graduation and for continuing the program at any level and to assign special honors to students who excel. Grades are reported in accordance with the following grading system:

A- Superior academic achievement; 4 honor points per credit hour.

B- Above average academic achievement; 3 honor points per credit hour.

C- Average academic achievement; 2 honor points per credit hour.

D- Deficiency in academic achievement; 1 honor point per credit hour.

F- Failure in academic achievement; no honor point per credit hour.

P- Passing; this grade is assigned to students satisfying the requirements in courses taken by proficiency examinations and for courses in which such grade is required. This grade is not included in the computation of the grade point index.

NP- Not passing; this grade is assigned to students who fail in the courses indicated under the grade P. This grade is not included in the computation of the grade point index.

Courses completed at the University and taken in other higher education institutions having previous authorization from the corresponding authorities at Inter American University will be included in the computation of the grade point index. The grade point index is determined by dividing the total number of honor quality points by the total number of credits completed with the grades of A, B, C, D, or F.

All courses that grant academic credit require tests or other grading tools. This includes a final examination or its equivalent. Faculty members will indicate on their class register how the final grade was determined.

Change of Grades Request

Students who believe that their final grade in a course is erroneous must notify this, in writing, to the course instructor, with a copy to the proper department chairman. This faculty member will be responsible for discussing the evaluations with the student and if necessary will submit an amendment to the student's final grade according to the process established by the Institution.

If students are not satisfied with the attention given to grade change request, they may resort to the procedure established in Article 2, Part A, number 8, of the General Student Regulations.

The deadline for requesting a change of grade will be the deadline for withdrawal with a grade of W of the academic term following the term of the same type in which the grade was given.

Administrative Action Symbols

The following symbols are used to indicate administrative action taken in regard to student status in courses for which they registered.

W-   Course Withdrawal: Assigned when the student withdraws from a course after the end of the period for class changes, but no later than the last day of class. This symbol appears in the academic file.

DC-   Course Withdrawal: Assigned when the student withdraws from a course before the end of the period for class changes. This symbol does not appear on the student transcript.

AD-   Administrative Drop: Assigned when the University drops the student for reasons such as death, suspension or other situations warranting a drop. This symbol appears in the academic file.

AW-   Assigned in the electronic register when the professor informs, no later than the dates established in the academic-administrative calendar, that the registered student never attended the course or never participated in any related academic activity. The courses to which the annotation AW is assigned will not form part of the academic record of the student.

MW-   Symbol used to indicate total withdrawal for military reasons.

I-   Incomplete: When students have not completed a course requirement and the professor determines that there are valid reasons for it, the symbol "I" (Incomplete) may be assigned. Together with the symbol "I", the professor will include a provisional grade, after assigning zero for the unfinished work. When faculty members assign an "I", they shall report to their immediate supervisor the grade that the student has earned up to that time, the evaluation criteria and a description of all unfinished work, if applicable. A student who receives an "I" must remove it by the date specified on the Academic Calendar. The professor will have five workdays after the date for the removal of incompletes, as established in the academic-administrative calendar of the corresponding term, to inform the student's grade to the director of the department. The responsibility for removing the "Incomplete" rests on the student. If the "Incomplete" is not removed within the time specified, the student will receive the informed provisional grade. This norm will apply whether or not the student enrolls the following semester.
The School of Law and School of Optometry will adjust this norm to their respective needs.

UW-   Assigned in the electronic registry on the date to inform the grades, as established in the academic administrative calendar, when the student:

1. Has stopped attending classes for at least three consecutive weeks in a semester or its equivalent in other academic terms, without presenting a justification to the professor or dean of students, with the exception of those students with veterans' benefits, who will be assigned the action symbol immediately when they stop attending class for two weeks or more, or the equivalent of this in other academic terms.
2. Has not participated in any academic activity related to the course (including the final examination) after the time period established in number one above.
3. Does not qualify for the grade of incomplete or (F).

When the annotation UW is given, the professor will inform the last date of attendance or participation in an academic activity related to the course.
This annotation will form part of the academic record of the student.

AU-   Symbol used to indicate on student transcripts that the course was audited. No honor points or University credits are awarded.

R-   Symbol used to indicate the course was repeated. This symbol appears in the academic file.

T-   Symbol used to indicate the course was transferred from another institution. This symbol appears in the academic file.

Veterans Services

The services for veteran students are explained in the General Information (p. 53) section.

Academic Recognitions

Dean of Academic Affairs' List

At the beginning of the academic year, the Dean of Academic Affairs will announce the names of students with a cumulative GPA between 3.25 and 3.84 and who have achieved an academic index of 3.25 or more in the previous year.

To consider students to be included in the Dean of Academic Affairs' List:

1. The academic year will be defined as the period from June to December of each calendar year and from January to May of the next calendar year.

2. Students must have passed at least twenty-four (24) credits during the previous academic year.

3. The Registrar will submit the list to the Dean of Academic Affairs who will then notify the students that have attained the distinction of appearing on the Dean of Academic Affairs' List.

The student transcript will reflect the academic years in which the student was on the Dean of Academic Affairs' List.

Chancellor's List

At the beginning of the academic year, the Chancellor's will announce the names of the students with a cumulative general average between 3.85 and 4.00 and who have achieved an academic index between 3.85 and 4.00 in the previous year.

1. To consider students to be included in the Chancellor's List:

2. The academic year will be defined as the period from June to December of each calendar year and from January to May of the next calendar year.

3. Students must have passed at least twenty-four (24) credits during the previous academic year.

4. The Registrar will submit the list to the Chancellor who will then notify the students that have attained the distinction of appearing on the Chancellor's List.

The student transcript will reflect the academic years in which the student was on the Chancellor's List.

Academic Excellence in Majors Award

In the activity for Recognition of Student Achievement recognition of academic excellence will be given to the student or the students with the highest grade point average in their major. They must meet the following criteria:

1. Have a general academic index of 3.50 or more.

2. Have taken at least 30 percent their major credits at Inter-American University with a grade point index of 3.50 or above.

Student Leadership Award

In the activity for Recognition of Student Achievement recognition of student leadership will be given to the student or students, who meet the academic progress norms, are recommended by the faculty and/or the administration and who meet any of the following requirements:

1. Outstanding participation in student organizations.

2. Distinction in the external community.

3. Contribution in improvement of university community conditions.

Support Services and Student Life

Accesibility

Notice of Non-Discrimination and Identification of Section 504 Coordinator

Policy Statement

It is the policy of Inter American University of Puerto Rico that, in accordance with Section 504 of the Rehabilitation Act of 1973 **(Section 504)**, no to discriminate on the basis of disability in its programs, services or activities in violation of Section 504.

Policy Document **E-0623-011 Guidelines, Standards and Procedures for Accommodating Requests for Reasonable Accommodation of Students** is the policy that establishes the policies and procedures for students with disabilities attending Inter American University of Puerto Rico.

Contact the campus 504 Coordinator or send an email to zfigueroa@inter.edu with questions or concerns about access to a program, service or activity.

You may direct questions about Section 504 rights or procedures to:

Zulma Figueroa, Ed. D.
(787)766-1912 Extension 2516
zfigueroa@inter.edu
399 calle Galileo final
Urb. Jardines Metropolitanos
San Juan, Puerto Rico 00927-4518

Academic Advisement

The University offers academic advisement services to its students. Once a formal declaration of major has been made, the academic advisor assigned to each student will assist in the process of developing student study potentials to the utmost.

Students should meet with their academic advisor prior to registration to receive orientation on their program of studies. Students are responsible for the courses in which they register.

University Orientation Program

Inter American University of Puerto Rico recognizes that to develop an educated person, it is necessary to provide a set of integrated educational experiences and programs and support services. Among the services offered by the University is the University Orientation Program. The mission of this program is to promote the integral development of students, so they may achieve their formative goal, and therefore, their self-realization and well-being.

Professional counseling, as a support process, has a preventive approach as well as one for the development of individuals, although if necessary, it identifies, refers and coordinates services for students who may show pathological conduct in the educational scenario.

The Services of the Program are offered by licensed professionals who help students to develop the skills necessary to obtain the greatest benefit from the university experience. Therefore, orientation is directed toward attending the different needs of the university student in the following areas:

1. **Personal:** interpersonal relations, self-esteem, self-knowledge, motivation, decision making, etc.

2. **Vocational:** exploration and selection of careers, vocational decision making, definition of academic objectives, selection of major, etc.

3. **Educational:** different study techniques, academic motivation, etc.

Student Services and Activities

Audiovisual Center

Each Center offers a variety of audiovisual services to assist in the teaching-learning process. These use the most modern technological resources available. The Audiovisual Center has two main functions: the production of audiovisual and digital materials to complement the educational process and the offering of direct services to faculty and students.

The Centers design and produce their materials in facilities for sound and television recordings and for photography and the graphic arts. Projection services for individuals and

groups as well as exhibitions are offered.

In general, these Centers gear their efforts towards facilitating the imparting of knowledge. The Centers contain collections of current materials in all curricular areas.

Educational and Technological Services

The University stresses the importance of developing educational resources that complement the teaching function. As a result, several programs have been implemented to integrate the latest technological advances to the University's educational services.

Information Access Center (Library)

Each campus has an Information Access Center (IAC) with properly capable human resources, educational resources and appropriate physical spaces.

These Centers are organized as a system that works in co-ordination. An online catalog provides access to all bibliographical resources that the Institution owns, as well as to audio-visual materials, printed magazines and electronic books available for study and research.

The Information Access Centers provide remote access to the electronic data bases that the Institution subscribes to, and those prepared internally, and to others of scientific interest that are available free of charge.

Each Information Access Center is considered an integral part of the development of the library programs of the University, among which the development of information and research skills stands out.

The System has a collection that exceeds a million printed and non-printed items, such as printed and electronic books, educative data bases of academic magazines, educational videos, microfiches and microfilms.

Medical Service

The academic units, except the School of Optometry, have a First Aid Center that offers first aid and offers guidance on the health care.

Residence Halls, San Germán Campus

The San Germán Campus has two student residences; one

designated for women and one for men. The request for the rental of the rooms may be filed at any time and will be subject to space availability. Information related to the application and services is available in the administration office of each student residence and in the Resident Manual, electronic version, which can be accessed on the campus website.

Student Activities

During the academic year, the University and the Student Council of the various instructional units sponsor a variety of cultural, social, academic, religious and recreational activities in which all students and the University community are invited to participate.

Such participation fosters personal and professional growth and provides leadership training by encouraging mutual understanding and cooperation and by emphasizing the ideals of service, good citizenship and respect for human values. The University, within the limits of its resources, endeavors to provide such activities.

There are many clubs and organizations at the instructional units. These organizations may be academic, professional, cultural, recreational, social, sports or religious in nature. The Office of the Dean of Student Affairs at the various instructional units will provide, upon request, up-to-date information on clubs and organizations and their current officers and membership.

Sports and Recreation

Inter American University has a varied sports program in which students have successfully represented the University in the Interinstitutional Athletic League and in other sports organizations in Puerto Rico and in other countries. This competition has been in basketball, soccer, volleyball, swimming, tennis, wrestling, weight lifting, softball, baseball, cheerleading, judo, and track and field.

Students participate in intramural contests as well as in the Interinstitutional League of Extramural Sports composed of the campuses of Inter American University.

In each unit, according to its individual needs, there is a program of intramural sports, which offers the opportunity to compete to students who cannot aspire to become first rate athletes. These sports and recreational activities offer students the opportunity to establish friendships, to fraternize with the University community and to develop physically, mentally and socially.

Students interested in more independent recreation can use

the facilities for ping-pong, pool and tennis or they can participate in chess, dominoes and other games in competition with other universities.

Religious Activities

Committed to the Christian roots of the foundation of our University, each academic unit has an Office of University Chaplaincy that responds to the Institutional ecumenical Christian policy, which promotes the experience of the faith from a Christian-ecumenical approach. Each instructional unit also offers pastoral care services, spiritual enhancement and reflective experiences, in addition to the established celebrations during the liturgical year. The participation of the University community is encouraged in the different events, but is completely voluntary.

Student Councils

Student councils, as provided by the General Student Regulations, may be organized at all the instructional units of the University. Their members are elected from the student bodies according to the established procedures. These procedures provide for direct participation of the largest number of students possible from all the units.

The Student Council is given funds for organizing activities promoting student life and academic endeavors of the unit. Students on disciplinary probation are not eligible to hold posts in the Student Council.

Student concerns are canalized through the Student Councils. The Councils meets regularly with University authorities and receive relevant information about University development.

Student Participation

The University advocates student participation at all levels and in various forms. A total of 39 students with voice and vote participate in the Academic Senates of the individual Campuses. Three students: two undergraduate and one graduate, participate in the University Council. All of these students are elected by the student bodies of their respective instructional units. The procedures for the election of these students provide for direct participation of the greatest number of students possible from all the units.

Student Centers

The instructional units have student centers, which meet the needs of the University community: students, faculty, administration, alumni, parents and friends. These centers provide appropriate areas for social, educational, artistic, cultural and recreational activities.

Day Care Centers

Some campuses have Day Care Centers sponsored by the University and/or by federal agencies. These centers offer a variety of services depending on the sponsoring agency.

Parking Service and Traffic Rules on Campuses

The Traffic Laws of Puerto Rico are complimented by the campus' internal rules related to on campus traffic. All students interested in access to the campuses with a motor vehicle must obtain a permit to these effects. The permit and the payment for parking should not be interpreted as a guarantee of a parking space.

Students are responsible for observing traffic rules and driving properly. The University is not responsible for damage that vehicles parked on the premises may suffer or for articles left inside the vehicles. Any personal or property damage caused by students while driving inside University installations will be their responsibility.

Study Modalities and Learning Experiences

Special Studies and Courses

The category of Special Studies and Courses provides students with the following study options, depending on their particular interests and needs:

Seminars

Seminar work is characterized by integrating the analysis of ideas and major issues of one or more disciplines. This provides students the opportunity to use the skills and knowledge they have acquired during their studies.

Seminars are governed by the following guidelines:

1. Admission to seminars requires the approval of the Director of the Department and the professor. Bachelor Degree students must have completed at least 30 credits. Associate Degree students must have completed at least 12 credits in programs composed of 60 credits or more and nine credits in programs composed of less than 60 credits.

2. The number of students in seminar courses is limited to 15.

3. Seminars are offered on the basis of from 1 to 6 credits per course. The course must have the authorization of the Director of the Department and the Division Dean or Dean of Academic Affairs.

4. Only six credits in seminar courses will be credited towards graduation in Bachelor Degree programs and three in Associate Degree programs.

5. Seminar courses are identified by combination 297 or 497 in the first three digits, (297 Associate Degrees; 497 Bachelor's Degrees).

Special Topics

Special Topic courses permit the offering of courses that enrich student academic development. These offerings may be made when special circumstances or rare events occur or when an outstanding specialist in the field is available for teaching the course.

Special Topics are governed by the following norms:

1. Special topics may be offered for a value of from 1 to 6 credits per course.

2. The course must be authorized by the Department Chairperson and Division Dean or the Dean of Academic Affairs.

3. The titles of the special topic courses will appear on student transcripts.

4. Special topics in all disciplines are identified by the combination 197 or 397 in the first three digits (197 Associate Degrees; 397 Bachelors' Degrees).

5. Regular courses described in this Catalog may not be taken as Special Topics.

6. A maximum of six credits will be accredited toward a degree at the University.

Cooperative Education

The courses of this modality are designated to provide regular students with practical experience, which will develop their skills that will help their productivity once they enter the work environment.

This kind of study provides the formal integration of academic studies and work experience outside the University Campus.

Students desiring to enroll in Cooperative Education courses must meet the following requirements:

1. Have approved a minimum of 60 credits with a general academic index (GPA) of 2.50.

2. Have approved at least twelve (12) credits in the major with a general academic index (GPA) of 3.00.

3. Possess authorization from the chair of the department and the organization that will employ the student in the COED modality.

The student may take up to a maximum of thirteen (13) credits in Cooperative Education courses towards the Bachelor's degree and a maximum of seven (7) credits towards the Associate Degree. Cooperative Education courses are subject to the availability of practice scenarios.

Experimental Courses

Designating courses as "Experimental" permits the temporary offering of new courses not appearing on the official course lists of the University thus making it

possible for these courses to be offered experimentally while being evaluated. Experimental courses may be offered in accord with the following norms:

1. Experimental courses may be offered with a value of from 1 to 6 credits per course.

2. Experimental courses must be authorized by the director of the department, dean of faculty, if applicable, and by the dean of academic affairs.

3. After an experimental course has been offered for two academic years, it must be evaluated by the department, the dean of faculty, if applicable, and by the dean of academic affairs, in order to determine if it becomes a regular course. If the recommendation is favorable, the resolution of the new course will be sent to the Academic Senate.

Individual Research

Courses of Individual Research offer students the opportunity to undertake a definite project of formal research. Students will work under the guidance of a full-time faculty member with the minimum rank of Assistant Professor.

This type of study is characterized by increased individual responsibility and research initiative required of the student.

Student desiring to take a course through individual research and who meet the requirements presented below, must draw up with the professor the official contract in which the nature of the project and the activities the students propose to carry out are clearly defined.

The contract must be approved by the Department Chairperson and the Division Dean or the Dean of Academic Affairs. To undertake Individual Research, students must abide by the following:

1. Only students who have completed 90 or more credits towards their Bachelor's Degree (or 75% of the required credits towards their Associate Degree) with a minimum overall grade point index of 3.00 may opt for individual research courses.

2. Bachelor Degree students are limited to a maximum of six credit hours and Associate Degree students are limited to a maximum of three credit hours of Individual Research to be applied toward their degree at the University.

3. Regular courses in this Catalog may not be taken as

Individual Research courses.

4. Individual Research courses will be identified with a special code.

5. Each Individual Research course must be completed during the term in which the student is enrolled.

Online Education

Online Education is conceived as a formal educational process in which the major part of the instruction occurs when the student and the instructor do not concur at the same place and time. This is a planned experience in which the variety of synchronic and asynchronic technologies such as: Internet, videoconferences, interactive videoconferences in audio and in video, and other modalities are used to promote learning when the student is at a different location from that of the professor. These experiences are designed to stimulate interaction and verification of learning.

Technologies and Media Used in Online Education

Inter American University has incorporated various technologies and media into its teaching and learning process, such as interactive videoconference and online courses. In addition, it offers the option of combined study courses.

Interactive Videoconference

These are courses offered by the synchronic modality that involve interactive transmission of video, voice and data. The course originates in one place with participating students in remote localities. The faculty-student and student-student interaction occurs in a simultaneous or synchronic manner. The instructor may make use of electronic presentations and other computerized materials, as well as segments of video and other educational materials. This implies previous and extensive planning and development of such materials. In addition, the prior sending of materials for each session by means of fax, Web, or e-mail is required. Also, the presence of a facilitator or official in charge of the discipline (for example, a teaching assistant or graduate student in an internship) and compatible videoconference equipment are required at the remote sites.

Online Courses

Courses through the World Wide Web. Each student will be responsible for having access to a computer or

electronic device with the Internet where they receive materials and submit their assignments and activities. Communication and interactivity between faculty-student and student-student is done through the official platform provided by the Institution to complete any academic activity required in the course. The development of all materials and their inclusion on a WEB server is required prior to first day of classes. The Institution will guarantee remote access to information resources.

Combined Study Courses

These are course in which the student combines the modalities of class attendance and study on-line. The combined study modality offers students the opportunity to take fifty percent of the teaching-learning process through direct contact (faculty-students) and fifty percent of this process through the World Wide Web in each academic term. Each student is responsible for having acces to a computer or electronic device with connection to the Internet where the student receives the materials and sends the assignments and other class work. The communication and interaction (faculty-students) take place primarily in the class attendance sessions. For this reason, class attendance is fundamental and obligatory in order to give continuity to the works assigned on the Web.

Proctored Evaluations

Refers to assessments that ensure student authentication, integrity in the educational process, and academic rigor. Distance courses include, at least, a proctored activity or assessment.

The institution establishes the rules and procedures for the administration of proctored evaluations by authorized personnel or means, and the service provider's guidelines.

The academic units will decide which types of activities or evaluations will be submitted to the proctored procedure, as one of the means to validate the identity of an online student.

Teleconference Center

The University has a Teleconference Center whose mission is the systemic coordination of the application of telecommunication tools as well as those of interactive videoconferences in online education. This Center promotes faculty competence and interactive online education through courses, teleconferences, meetings, seminars, and lectures. The Center provides simultaneous interaction with video, voice and data, which permits

complete interaction between faculty members and students located at distant sites. At present, the Central Office of the System, as well as the Arecibo, Barranquitas, Bayamón (including the School of Aeronautics), Guayama, Metropolitan, Ponce and San Germán Campuses have videoconference rooms equipped with advanced telecommunications technology that permits the integration of multimedia.

Non-traditional Learning Modalities

Study by Contract with Support of the Web

Study by contract with support of the Web is a written agreement signed by the student, the director of the department and the professor assigned to the course. By means of this modality students fulfill the requirements of a course or area of study following the instructions of his professor. This modality implies an actual contact, with a regularity previously established, and a continuous interaction between the professor and students, through the learning resources and of the didactic tools of the technological platform. The contract with support of the Web can be used in any of the components of the University curriculum (general education, courses of the major, prescribed distributive courses, minor and the elective courses). The process requires the active interaction between the student and the professor as an essential component of the contract. The General Education courses and the courses of the major offered by this modality require the favorable recommendation of the faculty specialized in the discipline or in the particular field of study.

By means of the modality of Study by Contract with Support of the Web, the student and the professor agree on the following aspects:

1. The long term goals and objectives of the student

2. The terminal objectives of the course for the period of time in which the particular contract will be in effect

3. The learning activities that the student will promise to undertake, including a description of the contents and the skills to be developed, the selection of resources to achieve the required learning and the number of credits that the Institution will grant upon the satisfactory completion of the learning activities

4. The methods, criteria or norms that will be used to evaluate the performance of the student

The negotiation of a contract between student and professor constitutes a valuable experience for the student. The reflection on goals and plans of life, the formulation of specific objectives for a particular contract, the selection of learning activities, the resources to be used and the form in which the learning will be evaluated, help to the intellectual and personal development of students. In addition, it helps students take responsibility for their learning, and develop and apply self-learning skills.

Students may register in courses offered by the modality of Study by Contract with Support of the Web if they meet the following requirements:

AVANCE Students

1. Attend an academic counseling.

2. Comply with the satisfactory academic progress norms, except new students.

3. Comply with the academic requirements of the program of study to which belongs.

Regular Students

1. Be a candidate for graduation and due to insufficient registration, the University cannot offer the course by the traditional modality.

2. Have a general grade point index and of minimum average index in the major of 2.00.

3. Comply with the academic requirements of the program of study to which belongs.

Validation of Learning Experiences

The University offers students the opportunity to demonstrate mastery of the content of many of the courses included in the General Catalog through validation tests. The regular student can approve by these modalities up to 12% of the total credits of the program of studies. This will be done provided that there is the appropriate means and scale to verify the expected level of execution and the academic departments have the necessary resources available. If the student demonstrates mastery in the manner stipulated in this section, the corresponding course credits will be awarded without having to attend classes.

Written Tests for Validation of Learning Experiences

These consist of a written examination based on the entire content of a course. Tests in Spanish may be prepared by the Spanish faculty of the University. The tests in English and mathematics may be prepared and administered by CLEP, by the Advanced Placement tests of the College Board or by the English and mathematics faculty of the University. Passing scores on the CLEP will be those recommended by the American Council on Education for examinations given in English.

First-year students who score 560 or higher in the mathematics portion and 580 or higher in the English portion of the PAA test may take validation exams in the core courses of the disciplines in which they were earned. these scores up to two weeks after the start of classes. Each campus will be responsible for making the pertinent arrangements so that the student who so wishes can take these exams during the first semester of study, before enrolling in the course that has the validated course as a requirement.

Proficiency Examinations

Some of the courses in the General Catalog are not suitable for testing by written examinations, as in the case of skills courses that require some type of manual performance or experimentation. In these cases, other means may be provided to measure their skills. Examples of measurements are typing exercises, supervised activities in art, music and education courses and in laboratory procedures, among others.

The rules governing proficiency examinations are the following:

1. Students should consult the proficiency examination schedule in the respective academic departments for the dates of the examinations.

2. Students desiring to take proficiency examinations must make a request to do so in the office of the corresponding Department Chairperson at least three weeks prior to the date officially announced for the examinations. (Dates will be announced in advance to allow students to apply within the specified time.)

3. Students shall have access to course syllabi and shall be informed as to the type of examination for which they should prepare.

4. Students shall pay 50 percent of the regular per credit cost for the written and performance tests. This payment must be made at least 10 workdays before the date of the examination.

5. Students shall present and deliver to the examination proctor a written authorization from the Department Chairperson. This person will notify the test results to the student and to the Office of the Registrar which will enter the course and a corresponding grade of P or NP on the student's transcript.

6. University level credit earned through proficiency examinations will appear on the students' academic transcript with the grade of P. The minimum grade for which credit will be given is that indicated by the letter grade of C or its equivalent. In those cases where equivalencies have not been determined by prior norms or standards, the Vice President for Academic and Student Affairs will determine them.

7. Students shall not be permitted to take proficiency examinations for course in which they are enrolled or courses that have not been approved.

8. All students must meet the standards for satisfactory academic progress, except for incoming students.

9. Students who have discontinued their studies for a period equal or greater than one year must be readmitted in the academic term in which they expect to take the examination.

Portfolio

The portfolio is a compiled folder of files completed by by the student, which contains information and evidence showing the student's experiences and achievements. In this document the student's learning experiences and achievements are identified, organized, developed and carefully evidenced. Students must meet the following requirements: (1) be registered or be an active student of the University, (2) have declared a major and be admitted to a program of studies, (3) meet the academic progress norms, unless they are newly admitted students. The portfolio should be prepared in harmony with the Institutional Guide: The Validation of Learning Experiences by Means of the Portfolio.

The academic standards governing portfolio are:

1. Academic credit is granted only for knowledge acquired and not for experiences.

2. University credit is granted only for University level knowledge.

3. The learning must have the proper balance between the required theory and practical application.

4. The decision regarding the level of competence and the corresponding credits is made by professors who master the subject matter.

5. The credits granted and accepted must correspond proportionately to the academic context for which they are awarded.

The process for presenting a portfolio is the following:

1. Students will give their portfolio application to the director of the department to which the course or courses, for which they are requesting conformation, belong. They must include with their request a copy of the transcript to avoid the confirmation of learning to which credits have been granted previously.

2. The department director will appoint a professor to evaluate the request and to orient the student on the process and the criteria that will be used in the evaluation of his learning. Using the syllabus or syllabi of the course, the professor will determine if the student is a candidate for this modality.

3. If the student qualifies for this modality, he will pay a fee equivalent to 50% of the regular cost of each course, for the evaluation of the portfolio (according to the credits).

4. After presenting evidence of payment to the department director, the director will designate a professor as mentor and evaluator of the portfolio. The student will be given a copy of *Institutional Guide: The validation of learning experiences by means of the portfolio.* The payment for this request will not be reimbursed to the student.

5. The student will prepare and organize his portfolio together with the designated professor, who will determine which documents must be presented and the techniques that will be used to demonstrate the student's learning by using the *Portfolio Evaluation Instrument.*

6. During the evaluation process, the professor will make recommendations to the student, in agreement with the dates established for their meetings.

7. The student will turn in his portfolio in digital format in CD, no later than the last day of classes of the term for which he is registered.

8. The professor will use the *Portfolio Evaluation Instrument* to make his evaluation uniform and objective.

9. The professor will submit the results of his evaluation to the department director, who will endorse the confirmation and send it to the Office of the Registrar, for the appropriate official action.

10.   When the evaluation of the portfolio is unfavorable, the professor, or in his absence, the department director, will inform the student the reasons for this decision.

11.   The grade the student will receive will be P (passed) or NP (not passed).

International Student Mobility Program (ISMP)

Inter American University, in agreement with its commitment to increase projects related to globalization and internationalization, provides students with opportunities to participate in curricular and co-curricular experiences outside Puerto Rico in the following categories:

- Studies outside Puerto Rico (*Study Abroad* - SA) that take place under the provisions of the current collaborative agreements included in the University's list of active consortia.

- Non-academic Internships

- Academic and professional leadership development activities.

The Vice-presidency for Academic and Student Affairs and Systemic Planning informs the deans of academic affairs of the opportunities for international student mobility each year. These vary in harmony with the consortia established by the University. The list of active consortia is updated and published each year in the Website inter.edu.

Academic Requirements to Request Participation in the ISMP

Any student interested in participating in any of the student mobility opportunities must meet the following requirements:

1. be a full-time student at Inter American University,

2. have a minimum general academic index of 3.0 in the University, or have the index required by the specific project or program for which he is applying,

3. have approved at least 30 credits of his undergraduate studies or will complete these upon completion of the term in which he applies, or be studying in at least his first year of studies at the graduate level,

4. show evidence of participation in extracurricular activities and communitarian service during his university life,

5. be recommended by a professor of his study program,

6. be interviewed and favorably evaluated by the Official Liaison or Coordinator of the ISMP of his academic unit, and

7. have the endorsement of the Chief Executive of the academic unit.

A student selected to participate in the ISMP must:

1. Master the language of the country where the host institution is located.

2. Know and comply with the laws of the country visited, and the regulations of the host institution.

3. Demonstrate that he has available to him the financial resources to cover the educational costs.

4. Sign a release of responsibility.

5. Have a health insurance plan that covers the service costs in the country visited.

6. Register in the courses or program, after consulting with the director of the Academic Program he is studying.

7. Inform previously any change, that he desires to make in the courses or the program in which it has registered, to the Coordinator of the ISMP.

8. Totally complete the program or the courses in which he has registered.

9. Meet the evaluation criteria of the host institution.

10. Make the necessary arrangements to obtain the transcript of credits upon completing the program and give the grade report to the Coordinator of the ISMP, who will transmit it to the registrar, in a period not greater than six months.

Academic load, grades assigned and the granting of credits by Inter American University for courses taken in other institutions

Before registering in a course in a host institution, the student must have the authorization of the PMEI coordinator, or the representative designated by the chief executive of the academic unit, who will determine the course equivalency in consultation with the director of the Academic Program. The student's academic load will be determined in agreement with the criteria used at the host institution for these purposes.

The grade obtained in the host institution will be converted

to the grading system of Inter American University. This will be considered to determine: the general academic index, the study program index, the credits attempted, the credits approved, the tempo of approval and the maximum period of eligibility. The grades informed under this experience may not be changed.

Federal and State Financial Aid

A student eligible for federal or state financial aid may receive this in an institution outside Puerto Rico, as long as this has been established in the consortium with the host institution. The ISMP Coordinator and the director of Financial Aid will provide information for each individual case.

Satisfactory Academic Progress Norm: Undergraduate Programs

The fundamental mission of Inter American University of Puerto Rico is to develop the talent of its students. The University is committed to making all reasonable efforts to enable students to complete the program of study in which they are enrolled and, thereby, obtain the corresponding academic degree. Cognizant of this responsibility, the University has incorporated the practice of periodically evaluating students' academic progress throughout their years of study. This allows the University to take the necessary measures to achieve greater student retention and enable students to reach their educational goals.

Inter American University requires that all students demonstrate satisfactory academic progress throughout their program of study. The attainment of satisfactory academic progress is related to eligibility to receive federal, state and institutional financial aid.

- The University will annually review students' satisfactory academic progress at the end of the academic terms that constitute the financial aid award year, which includes the period beginning July 1 and ending June 30 of the following year. The review will include all the academic terms during which a student studied.

- New students (regular and transfer) will be evaluated for the first time when they complete their first academic year of studies, as defined in section 4.2. After completing their first year, these students will be evaluated once a year along with the rest of the student population.

- The academic progress of students on academic probation with an academic plan will be evaluated at the end of each term.

- The maximum time frame will be evaluated each term. Students who do not complete their program of study within the maximum time frame established in the applicable federal regulations and, consequently, do not achieve satisfactory academic progress, will be unable to continue studying with financial aid. When students exceed the limits indicated in this document, the dean of academic affairs, or the person he designates, will evaluate each case to determine whether the student may continue studying without financial aid.

The University will notify students, by letter or email, of their academic status and how it affects their eligibility to receive financial aid.

Requirements for making satisfactory academic progress

The requirements to attain satisfactory academic progress are divided into two components: qualitative and quantitative.

Qualitative Component

6.1.1   The University will determine whether students have earned the required grade point average, which progressively increases according to the percent of earned credits. The grade point average that students must earn if they are studying for an associate or a bachelor's degree is indicated in the tables below.

Table 1. Grade point average required for associate degree programs and with a required graduation GPA of 2.00.

Percent (%) of credits approved	Progressive academic index
0-20	1.50
21-50	1.80
51-75	1.95
76-100	2.00

Table 2. Grade point average required for associate degree programs with a required graduation GPA of 2.25.

Percent (%) of credits approved	Progressive academic index
0-20	1.75
21-50	2.05
51-75	2.20
76-100	2.25

Table 3. Grade point average required for associate degree programs with a required graduation GPA of 2.50.

Percent (%) of credits approved	Progressive academic index
0-20	2.00
21-50	2.30
51-75	2.45
76-100	2.50

Table 4. Grade point average required for bachelor's degree programs (except Teacher Education Programs) with a required graduation GPA of 2.00.

Percent (%) of credits approved	Progressive academic index
0-25	1.50
26-50	1.75
51-75	1.90
76-100	2.00

Table 5. Grade point average required for bachelor's degree programs (except Teacher Education Programs) with a required graduation GPA of 2.50.

Percent (%) of credits approved	Progressive academic index
0-25	2.00
26-50	2.25
51-75	2.40
76-100	2.50

Table 6. Grade point average required for Teacher Education Programs of 121-128 credits and a required graduation GPA of 3.00.

Percent (%) of credits approved	Progressive academic index
0-36	2.50
37-55	2.75
56-74	2.90
75-100	3.00

Table 7. Grade point average required for Teacher Education Programs of 129-137 credits and a required graduation GPA of 3.00.

Percent (%) of credits approved	Progressive academic index
0-34	2.50
35-52	2.75
53-69	2.90
70-100	3.00

Table 8. Grade point average required for Teacher Education Programs of 138-153 credits and a required graduation GPA of 3.00.

Percent (%) of credits approved	Progressive academic index
0-32	2.50
33-48	2.75
49-64	2.70
65-100	3.00

The progressive grade point average does not apply to engineering programs. Students pursuing a bachelor's degree in engineering programs must maintain a 2.00 GPA.

Students pursuing a program of study with a duration longer than two years must achieve a minimum grade point average of 1.50 by the end of their second academic year; in other words, by the time they have attempted courses in four semesters, six trimesters or eight quarters, whether they are part-time or full-time students.

Quantitative Component

The University will determine whether the student meets the quantitative component of this satisfactory academic progress policy. In order to comply with this component, students must:

1. Earn at least 50%, 60% or 66.67% of the total attempted credits of their program of study at the annual satisfactory academic progress evaluation, as indicated in the following table. This is determined by dividing the total credits earned by the total credits attempted.

Percent of credits attempted in the program of study	Required Progressive Pace of Completion
1-25	50%
26-50	60%
51-100	66.67%

2. complete the program of study requirements in a period no longer than 150% of the published length of the program (measured in credits).

Maximum Time Frame

The maximum time frame is the maximum time a student can receive federal (Title IV), state and institutional financial aid to complete a program of study. For undergraduate programs, the maximum time frame is no longer than 150% of published length of an educational program measured in credit-hours. In other words, the student receive financial aid to pay for all the credits required by the program of study (100%) and an additional 50% for contingencies.

Transfer Credits Policy

The school accepts a maximum of 67 % of transfer credits from other schools toward associate degree programs of study. Students must satisfactorily complete at least one third of the credits required for the degree and at least one third of the credits required for the major at Inter American University.

The school accepts between 80 % and 85 % of transfer credits from other schools toward bachelor degree programs, depending on the total number of credits required by the program. Students must satisfactorily complete at least 24 credits of the total number of credits required for the degree at Inter American University, of which at least 15 credits must be credits required for the major. The rest may be General Education courses or elective courses.

Some programs of study do not allow transfer of credits. These exceptions are noted in this Catalog under the program description.

First Academic Probation and Financial Aid Suspension

The first time a student does not make satisfactory academic progress, as stipulated in this document, he will be placed on first academic probation status during the next academic term in which he enrolls.

If a student is authorized to change his major after being placed on probation, this status will remain in his academic record during the next term in which he enrolls, and he must comply with the provisions of section 6.4 of this document. However, when next evaluated, only the credits applicable to the new program of study will be considered, as explained in subsection 5.5.

Students who receive financial aid and do not make satisfactory academic progress, as stipulated in this document, will have their financial aid suspended. The students may appeal for reinstatement of financial aid.

The academic load of students on academic probation and financial aid probation will be limited to twelve credits per semester, trimester, or quarter. The dean of academic affairs will evaluate any exceptions to this provision, taking into consideration the merits of each case

Academic Plan for Overcoming an Academic Probation and the Appeal Process for Reinstatement of Financial Aid

All students on academic probation must develop, with the help of an academic advisor or professional advisor, an academic plan that will enable them to make satisfactory academic progress within the next two (2) semesters, three (3) trimesters or four (4) quarters. Academic plans may cover a longer time period for cases that warrant it.

As part of the academic plan, the student will give priority, but not limit himself, to:

1. repeat and pass courses which he has failed (F), abandoned (UW), or in which he has not obtained the grade required by his program of studies.

2. earn no less than 66.67% of the attempted credits upon completion of each academic term, and

3. obtain a minimum grade point average that will enable him to meet the required 2.00 graduation GPA, or the GPA required by his program of study.

A student who wishes to appeal a financial aid suspension, must submit an appeal to the dean of academic affairs, or the person he designates, upon receiving notification of the financial aid suspension. Financial aid may only be reinstated after the appeal is granted. Consequently, it is recommended that the student submit the appeal before or at the beginning of the term in which he plans to enroll.

The academic plan must be submitted along with the appeal.

The student must base his appeal upon mitigating circumstances, beyond his control, such as: 1) suffering a documented medical condition, 2) death of an immediate family member, 3) military deployment, or 4) other mayor circumstances beyond the student's control. The student must explain what has changed at that point in time that will allow him to maintain satisfactory academic progress moving forward. The dean of academic affairs will refer the student's petition to the Appeals Committee.

Each academic unit will have an Appeals Committee appointed by the chancellor to evaluate the students' appeals. The Committee may request advice from professors or any other university officers they deem relevant.

When evaluating an appeal, the Appeals Committee will take into consideration whether the student will be able to obtain the required academic progress by the end of the next academic term in which he enrolls or upon completion of his academic plan. The Committee will have a reasonable period of time to analyze the case and inform the chancellor of its decision.

If the Committee concludes that a student will be able to make satisfactory academic progress during the next academic term in which he enrolls, or will be able to reasonably fulfill the provisions of the academic plan, it will approve the appeal and grant the student a financial aid probation for the next academic term in which he enrolls or as long as he continues to comply with the provisions of the academic plan.

A student who receives financial aid probation and is required to comply with the provisions of his academic plan, may not change his major unless authorized by the Appeals Committee and develops a new academic plan to enable him to make academic progress.

A student can be on academic probation during one academic year, unless the academic plan establishes that he will require more time to make satisfactory academic progress. At the conclusion of each term, the student must comply with the provisions of his academic plan in order to retain his eligibility to receive financial aid.

Eligibility to receive financial aid during terms in which the student is on academic probation will be determined through the appeal process described in subsections 6.4.3 through 6.4.7.

If at the end of any of the terms under financial aid probation and academic probation, a student makes satisfactory academic progress, he will be considered in compliance with the satisfactory academic progress policy.

If at the end of any of the terms under financial aid probation and academic probation, a student fails to make satisfactory academic progress but has complied with the provisions of the academic plan for said term, the student will maintain the status of academic probation and financial aid probation.

If at the end of any of the terms under financial aid probation and academic probation, a student fails to make satisfactory academic progress and has not complied with the provisions of the academic plan, the student will be suspended academically for six months and financial aid will be suspended.

Process for Appealing the First Academic Suspension and the Financial Aid Suspension

If at the end of the period to comply with the terms of the academic plan for the first academic probation, the student does not make satisfactory academic progress, he will be academically suspended and his financial aid will be suspended. The first academic suspension will be for six (6) months. This period includes all applicable academic terms.

The dean of academic affairs will notify the student of this determination by letter or e-mail, a copy of which will be included in the student's academic file.

Students who want to appeal the academic suspension and financial aid suspension must prepare, with the help of a professional counselor or an academic advisor, an academic plan that will enable him to make satisfactory academic progress. The student must submit the academic plan, along with an appeal, to the dean of academic affairs or the person the dean designates, as soon as he receives notification of the financial aid suspension. Financial aid can only be authorized if the student's appeal is approved. For this reason, the student should submit the appeal before, or at the beginning of, the term in which he plans to enroll. The dean of academic affairs will refer the student's petition to the Appeals Committee. See Section 6.4.

When evaluating the petition, the Appeals Committee will consider whether the student will be able to make satisfactory academic progress by the end of the next academic year. The Committee will render a report on its

decision to the chancellor of the academic unit within a reasonable period of time. The dean of academic affairs will notify the student of the decision by letter or e-mail, a copy of which will be included in the student's academic file.

If the Committee concludes that the student's appeal has merit, he will be allowed to continue studying under the status of second academic probation and financial aid probation.

If the Committee does not approve the student's petition, the student will remain suspended for six (6) months, after which he may continue studying under a second academic probation status. The student must comply with the provisions stipulated in Section 6.4 of this document to make satisfactory academic progress and appeal the financial aid suspension.

If upon the conclusion of the second academic probation the student manages to make satisfactory academic progress, he will be in compliance with this satisfactory academic progress policy. Otherwise, he will be academically suspended for the second time and will again be placed on financial aid suspension.

Second Academic Suspension

A student suspended for a second time for not making satisfactory academic progress will remain under that classification for one academic year and may not appeal this decision.

At the end of the suspension period, the student may request readmission and, if the dean of academic affairs, or the person he designates, concludes that it is possible for the student to make satisfactory academic progress, he may be readmitted under the status of third academic probation.

Permission to continue studying under a third academic probation status does not imply that the student is eligible for financial aid.

A student who wants to appeal the financial aid suspension must prepare, with the help of a professional counselor or an academic advisor, an academic plan that will enable him to make satisfactory academic progress. The student must submit the academic plan, along with the appeal, to the dean of academic affairs or the person the dean designates, as soon as he receives the notification of the financial aid suspension. Financial aid can only be authorized if the student's appeal is approved. For this reason, the student should submit the appeal before, or at the beginning of, the

term in which he plans to enroll. The dean of academic affairs will refer the student's petition to the Appeals Committee. See Section 6.4.1 to 6.4.8.

If a student makes satisfactory academic progress by the end of the third academic probation, he will be in compliance with the satisfactory academic progress policy.

If a student fails to make satisfactory academic progress under a third academic probation, he will be suspended for a third time, and may not appeal this decision.

Readmission of Suspended Students

Requests for readmission from previously suspended students, as stipulated in this policy, or from students who have interrupted their studies while under academic probation, will be evaluated by the dean of academic affairs or the person he designates.

Students suspended for six months (first academic suspension) may resume their studies, after completing the stipulated period, under the status of second academic probation without having to apply for readmission. However, if they interrupt their studies for a period longer than one year, they will have to apply for readmission.

Students suspended for one year (second academic suspension) may be readmitted under the status of third academic probation, provided that the dean of academic affairs, or the person he designates, determines that it is possible for the student to make satisfactory academic progress.

All students thus readmitted must appeal the financial aid suspension y must comply with the provisions of Section VI of this document in order to make satisfactory academic progress and have financial aid reinstated.

General dispositions

1. Students enrolled in a program of study that has higher academic requirements than those established in this document must meet the program's requirements in order to remain in the program.

2. The maximum time frame will be evaluated each term. Students who do not complete their program of study within the maximum time frame established in the applicable federal regulations and, consequently, do not achieve satisfactory academic progress, will be unable to continue studying with financial aid. When students exceed the limits indicated in this document,

the dean of academic affairs, or the person he designates, will evaluate each case to determine whether the student may continue studying without financial aid.

3. Students must declare a major and may change it after consulting with the academic advisor. When students change their major, the credits attempted for the first major will not be considered when determining their new program grade point average and the pace of completion required to make satisfactory academic progress, except when these credits are among the requirements of the new program of study.

4. The courses of a program of study may be paid with financial aid while students remains in their original program or after making a duly authorized and registered program change.

5. All students may opt for declaring up to two minor concentrations that are defined in the current General Catalog and for which they comply with the requisites. These courses may be paid with financial aid until the students complete the major program's requirements or complete the maximum time frame, whichever occurs first.

6. Students who officially withdraw (W), abandon a course (UW) or fail, in other words, obtain a grade of "F" or "NP", can repeat the course as many times as necessary and pay for it with financial aid. On the other hand, students who want to repeat a previously earned course may pay for it with financial aid only once. An earned course is one in which the student obtained a grade of A, B, C, D, or P. The repetition of courses affects the Satisfactory Academic Progress Policy's qualitative component.

7. All repeated courses are considered attempted credits for the purpose of determining the maximum time frame, measured in credit hours, and the pace of completion. In the case of repeated courses, only the highest grade will be used to calculate a student's grade point average.

8. Transfer credits (T) are considered part of a student's academic record for the purpose of establishing the percentage of earned credits of the program of study's requirements and for determining the maximum time frame for receiving financial aid. Only transfer credits applicable to the program of study, including elective credits, will be validated. If students have already earned the elective courses required by their program,

no additional credits will be validated.

9. The evaluation to determine students' academic progress will not consider the courses in which they have received notations of I (incomplete) until the incomplete notations have been removed.

10. The University will notify students, by letter or email, of their academic status and how it affects their eligibility to receive financial aid.

11. After graduation, the academic transcript will not reflect a student's probation and suspension periods.

12. Students may not appeal a financial aid suspension and obtain a financial aid probation for the same circumstances on more than one occasion.

Graduation, Honors and Diplomas

Diplomas

Diplomas must be claimed by graduates at the Office of the Registrar no later than one year following graduation. The University will not be responsible for diplomas after that date.

Any notice, official or otherwise, mailed to a student's address as it appears on the records shall be deemed sufficient notice.

Graduation Requirements

Students will graduate in agreement with the requirements of their program of studies and the regulations established in the General Catalog of the University under which they were admitted or in any single subsequent catalog but no combination thereof. In the event that a required course of the selected catalog is no longer offered by the University, substitutions may be made with the approval of the Department Chairperson. Courses required in more than one program may be credited as such in each program. Courses taken after graduation will not alter the graduation grade point index. In the case of readmitted students, refer to the section Readmission to the University (p. 67).

Graduates must meet the current laws and regulations of their profession.

Note: Students who opt for a second major may not use financial aid from Title 1V to pay for the costs related to it.

Graduation Requirements for Associate Degrees

To complete requirements for graduation with an Associate Degree from Inter American University, students must:

1. Approve the General Education academic requirements and those specified in the program for the Associate Degree for which they are candidates. (See these requirements under Associate Degree Programs).

2. Achieve a minimum overall grade point index of 2.00 or that required by the study program.

3. Complete satisfactorily no less than one-third of all the credits required for the degree at Inter American University.

4. Complete satisfactorily at Inter American University no less than one-third of all course credits required in the major.

Graduation Requirements for Bachelors' Degrees

In order to fulfill the basic with a Bachelor's Degree from Inter American University, a student must:

1. Approve the total number of credits required by the study program.

2. Complete a major consisting of the number of credit hours specified in the curriculum of the student's major department. See the section Undergraduate (Associate and Bachelor) Degree Program and Course Descriptions.

3. Achieve an overall, minimum grade point index of 2.00, or the one required by the program of study. Remedial courses will not be counted toward the required academic index for graduation.

4. Achieve an overall grade point index of 2.00 or higher in the major field of study, or that required by the study program.

5. Complete satisfactorily at least 24 credits of those required for the degree at Inter American University.
5.a. When the student transfers from a university accredited by the Middle States Commission on Higher Education or another regional accreditation agency, he must complete satisfactorily at least 12 credits of those required for the degree at Inter American University.

6. Complete satisfactorily at least 15 credits of the major at Inter American University. (General Education courses and elective courses are not included)
6.a. When the student transfers from a university accredited by the Middle States Commission on Higher Education or another regional accreditation agency, he must complete satisfactorily at least eight credits of the major at Inter American University. (General Education courses and elective courses are not included).

7. Complete the General Education requirements for a Bachelor's Degree as established in the student's major.

Application for Graduation

Candidates for an Associate or Bachelor's Degree who have completed three-fourths of the required credits should apply for graduation no later than one academic term before the term in which they expect to graduate. Students must graduate from a campus authorized to offer the major and degree to be conferred. If the students are not studying at such a Campus at the moment of applying for graduation, they must apply at a campus in which they took residency courses. Applications may be obtained at the Office of the Registrar and should be returned to that Office after they have been filled out and stamped by the Business Office showing that the non-refundable fee of $100.00 has been paid for the doctor, master, bachelor and associate degrees. Failure to comply with this procedure may result in the postponement of the granting of the diploma.

Any student who considers that there is an error in the evaluation of his application for graduation should report this to the appropriate Registrar within a week after the receipt of the evaluation.

The payment of graduation fees of any kind, the listing of the student as a candidate for graduation in any document and/or invitation either to the graduation ceremonies or to any other activity related to graduation exercises shall not be interpreted as an offer to graduate until the Registrar's office certifies that the student has completed all requirements for the degree.

Only the completion of all requirements listed in this catalog or in any other official University directive entitles a student to graduation irrespective of any representation of any kind made by any official of this University.

Candidacy for graduation will be attained by the student after the faculty has determined that the requirements for graduation have been fulfilled. Subsequently, the faculty will present the degree candidates to the President of the University and to the Board of Trustees.

Students that have completed the graduate requirements and paid the graduation fee, but interrupt their studies, have the right that their payment be considered effective for four regular semesters or two academic years from the date of the last term in which they studied.

Graduation with Honors

The distinctions of Cum Laude, Magna Cum Laude, and Summa Cum Laude are awarded to students who have achieved academic excellence in the Associate and Bachelor degrees. To be eligible for these honors, the student must have earned an overall average of:

   3.25 for Cum Laude (with honors)
   3.50 for Magna Cum Laude (with high honors)
   3.85 for Summa Cum Laude (with the highest honors)

These distinctions are awarded only to students who have completed satisfactorily at least 30 percent of the credits required for the degree at this University. This same grade point index will be used in granting all other academic honors.

Posthumous Degree

In case of death of a student who has fulfilled the graduation requirements, such student may be considered by the appropriate university authorities for the granting of a posthumous degree.

Academic Norms of Compliance

Credit-Hours

The University defines one (1) credit for an academic term, as indicated below:

1. 15 hours of presential contact and 30 hours of academic, course related activities, which the student carries out outside the classroom; or their equivalent in academic, online activities

2. 15 hours of presential contact in the integrated modality of lecture-lab and a minimum of 30 hours of academic, course related activities, which the student carries out outside the classroom; or their equivalent in academic, online activities

3. 30-45 hours in a presential or virtual, closed laboratory

4. 45-60 hours of supervised practice

Course Offerings and Scheduling

This Catalog includes the courses that comprise the academic offerings authorized for Inter American University by the Board of Postsecondary Institutions of Puerto Rico. The curricular sequence of each study program is available in the academic departments and through Internet in the self-services of Banner. Each campus offers the courses in agreement with the curricular sequence of the academic programs that it is authorized to offer and with student demand. However, it is possible that a course cannot be offered in a specific term. In this case, students have the option of taking it in another campus that has it scheduled for the academic term of their interest or they may take an authorized equivalent course. Also, there are academic programs that include a component of "Prescribed Distributive Requirements" that, generally, require the student to select from among a list of courses or options. In these cases, the student will select among those courses that the campus schedules. However, students also have the option of taking Prescribed Distributive courses in another campus that has scheduled the courses of their interest in accord with the requirements of their study program.

Special Requirements of Practice and Internship Centers

Some academic programs of the University require students to complete a practice or internship in a real work scenario as part of the degree requirements. These external centers may be state and federal agencies, hospitals, and nongovernmental organizations, among others.

It is students' responsibility to comply with the external center's requirements in order to complete their practice or internship. Depending on the practice center, these requirements may be doping tests, HIV tests, an immunization certificate against hepatitis, a health certificate, a negative criminal record, or any other requirement that the institution or practice center may stipulate. If students refuse or are not able to meet any of the requirements, they will be unable to complete their practice or internship and, therefore, will not pass the practice or internship course or meet the graduation requirements of their academic program.

Compliance with Requirements of Regulated Professions and Employment

Some professions have licensing, certification, or professional association requirements or a combination of these in order for a person to practice the profession. Therefore, students and graduates who hope to practice a regulated profession must meet the current requirements of the organization that confers the license, certification, professional association or combination of these before initiating the corresponding proceedings with the agency or organization that applies to their profession. The licensing, certification, professional association requirements or a combination of these may vary from one jurisdiction to another. Therefore, compliance with the requirements in one area does not imply that the student also complies with the requirements of another region. Students are forewarned that the agencies that regulate the professions may change the requirements to practice these at any time.

Some employers of the private sector or government agencies have revalidation, examination or test requirements in order to choose a job. It is for this reason that, in these cases, students or graduates applying for work must meet the additional requirements beyond the

studies or diplomas that Inter American University of Puerto Rico offers and confers.

Responsible Conduct in Research Projects

Any student registered in courses that require carrying out research projects or who works in a research project must comply with the laws, regulation and policies applicable to that activity. The student must take the training required by the Institution and by the applicable state and federal regulations, in harmony with the type of research project.

Research Ethics Committees (IRB, IACUC and IBC)

Research Ethics Committees (IRB, IACUC and IBC)

The Research Ethics Committees of the Inter American University of Puerto Rico are:

- IRB – Institutional Review Board

- IACUC – Institutional Animal Care & Use Committee

- IBC- Institutional Biosafety Committee

These committees are responsible for ensuring that the University complies with state and federal laws and regulations, as well as with the institutional norms and procedures applicable to the protection and rights of human beings, animals, and biospecimens that are part of the research projects. .

The Research Ethics Committees receive requests for research that includes human subjects, animals or biospecimens developed by:

- internal professors or researchers from the Inter-American University of Puerto Rico;

- researchers from outside the Inter American University of Puerto Rico who wish to carry out research at the Inter American University;

- research resulting from externally funded grants;

- research resulting from collaborations with third parties in which one of our ethics committees is designated as the lead committee for the review of the protocols through a collaboration agreement.

- students enrolled in graduate programs that require

the development of a dissertation or research that includes any of the aforementioned groups.

People who require the services of any of the research ethics committees must complete the required training and submit the research protocol to the corresponding ethics committee for review and endorsement before beginning the interaction or research processes with any of these. . The identification, recruitment or obtaining of information from the subjects may not take place without first having the endorsement of the corresponding ethics committee.

Responsible Conduct in Research Projects (RCR)

Any student who works in research projects supported with external resources, or who collaborates as a research assistant to a professor in charge of a research project supported with external funds, must take the training related to responsible conduct in research required by the University and the applicable federal regulations. In addition, the student must provide evidence of having approved these trainings.

Other Research Projects

Research projects that do not involve human beings must also present evidence of compliance with institutional norms and the applicable state and federal regulations.

Warning on Compliance with Copyright Laws and Regulations

The unauthorized distribution or reproduction, by any means, of material protected by the copyright laws and regulations may entail the imposition of civil and criminal sanctions. The *General Student Regulations* contains provisions on academic honesty that cover the protection of this type of material and the breach of the provision may lead to the imposition of disciplinary sanctions.

There are legitimate ways to obtain and distribute protected materials. For more information, click here www.educase.edu/legalcontest.

Discontinuation of Academic Offerings

The University is committed to the renewal of its academic offerings, which includes the expansion, review, modification or discontinuation of academic programs offerings authorized by the Board of Postsecondary

Institutions of Puerto Rico. In case any academic unit of the University decides not to continue offering some academic program, students will have options available to them to complete the degree requirements. Courses online, study by contract with support of the Web, or other nontraditional modalities may be among the options.

Undergraduate Academic Offerings

The University's academic programs are based on the premise that, in order to achieve personal success and make valuable contributions to society, students should develop broad intellectual interests as well as prepare themselves in the best way possible to earn their livelihood. These objectives may be achieved by fulfilling the specific general education requirements in the fields of art, science and the humanities and by majoring in a particular area of studies.

All Campuses offer the General Education requirements and some majors. Students should consult their academic advisor for information regarding the academic offerings of the University's instructional units.

Institutional Codes, CIP Code, and Program Length

The following table presents the undergraduate programs authorized by the Board of Postsecondary Institutions of Puerto Rico with the code assigned by the University to identify the academic programs and minors. It also includes the Classification of Instructional Programs or CIP Code, according to the taxonomic scheme of the U.S. Department of Education and the program length in years. The program length is calculated by taking into consideration a complete academic load of 30 credits per academic year with satisfactory academic progress in the study program.

Academic Program	IAUPR Code	CIP Code	Program Length in Years
Associates, Bachelors, and Minors			
Accounting (AAS)	060	52.0301	2
Accounting (BBA)	166	52.0301	5
Minor in CPA Track	166G	-	-
Minor in Financial Accounting	166F	-	-
Minor in Internal Auditing	166I		
Minor in Taxes	166T	-	-
Agricultural Technology (AAS)	A452	01.0308	2
Agronomy (BSA)	B817	01.0308	4
Airway Sciences (BS)			
Aircraft Systems Management (Professional Pilot)	155	49.0199	4
Aviation Sciences Management	152	49.0104	4
Minor in Air Traffic Control	152T	-	-
Minor in Airway Dispatcher	152A	-	-
Minor in Aviation Management	152M	-	-
Minor in Commercial Pilot	151M	-	-
Animal Science with Pre-Veterinary	B535	01.1302	4
Applications Development (BS)	B525	11.0899	5
Minor in Applications Development	525M	-	-
Applied Chemistry			
Biochemistry	B528	40.0599	5
Forensic Chemistry	B530	40.0510	5

Nanotechnology	B529	40.0599	5
Minor in Biochemistry	528M	-	-
Minor in Forensic Chemistry	530M	-	-
Minor in Nanotechnology	529M	-	-
Audio Production and Postproduction (AAS)	A456	10.0203	2
Biology (BS)	180	26.0101	5
Minor in Biology	180B	-	-
Minor in Biology for Chemistry Students	180Q	-	-
Minor in Biology for Non-Scientific Majors	180C	-	-
Minor in Premedical	180P	-	-
Minor in Pre-Veterinary	180V	-	-
Biomedical Sciences (BS)	263	26.0102	4
Minor in Biomedical Sciences	263M	-	-
Biopsychology (BS)	B524	30.1001	4
Minor in Biopsychology	524M	-	-
Biotechnology (AAS)	A451	26.1201	3
Biotechnology (BS)	258	26.1201	5
Minor in Agricultural Biotechnology	451M	-	-
Minor in Biotechnology	258M	-	-
Minor in Marine Biotechnology	258A	-	-
Business Administration (AAS)	058	52.0201	2
Cardio-Respiratory Care (AAS)	091C	51.0915	3
Chemistry (BS)	132	40.0501	5
Minor in Chemistry	132M	-	-
Commercial Pilot (AAS)	A455	49.0102	2

Communications (AA)	071C	09.0100	2
Communication in Media Production (BS)	280	10.0105	5
Minor in Photography	280M	-	-
Communications in Public Relations and Advertising (BA)	235	09.0902	4
Minor in Advertising	235A	-	-
Minor in Communications	235M	-	-
Minor in Public Relations	235P	-	-
Computer Science (AAS)	054	11.0701	2
Computer Science (BS)	120	11.0701	5
Minor in Computer Science	102S	-	-
Minor in Computer Networks	120A	-	-
Minor in Mobile Device Programming	120P	-	-
Computer Technology and Networks (AAS)	A453	47.0104	3
Computer Technology and Networks (BS)	B523	47.0104	5
Minor in Computer Network Technology	453M	-	-
Minor in Network Security	B53M	-	-
Corporate Communication (BA)	289	52.0501	4
Criminal Investigation (AA)	A251	43.0104	2
Criminal Justice (AA)	095	43.0199	2
Criminal Justice (BA)			
Criminal Investigation	194	43.0104	4
Cyber Crime Investigation	B004	43.0116	4
Forensic Investigation	194B	43.0111	4

Program	Code	CIP	Level
Minor in Criminal Investigation	194M	-	-
Minor in Cybercrimes	004C	-	-
Minor in Cybercrimes Investigation	004M	-	-
Minor in Forensic Investigation	94BM	-	-
Minor in Penology	194P	-	-
Culinary Arts and Gastronomic Sciences (AA)	A252	12.0509	2
Culinary Arts and Gastronomic Sciences (BA)	B003	12.0599	4
Cultural Management and Ecotourism (AA)	A257	03.0207	2
Cyber Security (BS)	B534	43.0404	5
Design (BA)	283	50.0401	4
Design and Development of Video Games (BS)	285	50.0411	5
Minor in Design and Development of Video Games	120C	-	-
Diagnostic Ultrasound (AS)	A459	51.0910	3
Digital Graphic Design and Multimedia (BS)	291	50.0409	4
Minor in Digital Graphic Design and Multimedia	M291	-	-
Education (Teacher Education) (BA)			
Early Childhood Education			
Early Childhood: Pre-School Level	243	13.1209	4
Early Childhood: Elementary Primary Level (K-3)	236	13.1202	4
Early Childhood: Elementary Primary Level (4-6)	237	13.1202	4
Elementary Education in Special Education	231	13.1015	5
Physical Education			
Adapted Physical Education	207	13.1099	5
Physical Education at the Elementary Level	178	13.1314	5
Physical Education at the Secondary Level	176	13.1314	5
Secondary Education			
Biology	174	13.1322	5
Chemistry	187	13.1323	5
History	144	13.1328	5
Mathematics	128	13.1311	5
Social Studies	177	13.1318	4
Spanish	145	13.1330	5
Special Education			
Interdisciplinary Special Education (PK-12)	290	13.1099	4
Special Education	136	13.1001	4
Special Education in Autism	277	13.1013	5
Special Education in the Deaf and Partially Deaf	282	13.1003	5
Teaching of English as a Second Language			
Teaching of English as a Second Language at the Elementary Level	206	13.1401	4
Teaching of English as a Second Language at the Secondary Level	147	13.1401	4
Minors in Education			
Minor in Adapted Physical Education	207M	-	-
Minor in Early Childhood Education Preschool Level	243M	-	-

Minor in Early Childhood Education Elementary Level K-3	236M	-	-
Minor in Early Childhood Education Elementary Level (4-6)	237M	-	-
Minor in Education	296M	-	-
Minor in Education in Teaching English as a Second Language in Elementary Level	206M	-	-
Minor in Education in Teaching English as a Second Language in Secondary Level	147M	-	-
Minor in Elementary Education in Special Education	231M	-	-
Minor in Interdisciplinary Special Education (PK-12)	290M	-	-
Minor in Physical Education Elementary Level	178M	-	-
Minor in Religion and Education	088M	-	-
Minor in School Health Education	267M	-	-
Minor in School Social Work	118A	-	-
Minor in Secondary Education in Biology	174M	-	-
Minor in Secondary Education in Mathematics	128M	-	-
Minor in Secondary Education in Social Studies	177M	-	-
Minor in Secondary Education in Spanish	145M	-	-
Minor in Special Education	136M	-	-
Minor in Special	277M	-	-

Education in Autism			
Minor in Special Education in the Deaf and Partially Deaf	282M	-	-
Electronic Engineering Technology (AS)	A651	15.0303	3
Electronic Engineering Technology (BS)	B521	15.0303	4
Minor in Electronic Engineering Technology	266M	-	-
Engineering (BS)			
Pre-Engineering	245	14.0101	N/A
Architectural Engineering	B256	14.0401	4
Minor in Architectural Engineering	526M	-	-
Computer Engineering (BS)	272	15.1299	4
Minor in Hardware Systems and Integrated Systems	272M	-	-
Minor in Software Systems	272S	-	-
Electrical Engineering (BS)	216	14.1001	4
Minor in Communication Systems	216I	-	-
Minor in Electric Systems	216S	-	-
Minor in Power and Energy Systems Engineering	216D	-	-
Minor in Systems Engineering Control, Robotics and Automation	216M	-	-
Industrial Engineering (BS)	217	14.3501	4
Minor in Logistics and Operations Research	217A	-	-

Minor in Quality Systems	217B	-	-
Engineering Technology in Renewable Energy (AS)	A461	15.1703	3
Mechanical Engineering (BS)	218	14.1901	4
Minor in Aerospace Engineering	218M	-	-
Minor in Mechanical Engineering	218E	-	-
English (BA)	141	23.0101	4
Minor in Bilingual Oral and Written Communication	265B	-	-
Minor in Oral and Written Communication	265A	-	-
Entrepreneurial and Management Development (BBA)	275	52.0701	4
Minor in Electronic Commerce	275M	-	-
Minor in Entrepreneurialship	275A	-	-
Minor in Entreprenurial and Management	275G	-	-
Minor in Music Business Management	063M	-	-
Minor in Public Management	127M	-	-
Environmental Sciences (BS)	241	03.0104	5
Minor in Environmental Sciences	241A	-	-
Environmental Technology (BS)	229	15.0599	5
Finance (BBA)	222	52.0801	4
Minor in Finance	222F	-	-
Minor in Insurance	222M	-	-
Minor in Real Estate	288M	-	-
Fine Arts (BA)			
Ceramics	B811	50.0711	4
Drawing	B812	50.0705	4
Sculpture	B813	50.0709	4
Photography	B814	50.0605	4
Printmaking	B815	50.0710	4
Painting	B816	50.0605	4
Teaching Art	254	13.1302	5
Forensic Biology (BS)	294	26.9999	5
Minor in Forensic Biology	294M	-	-
Forensic Informatics (BS)	B002	03.0104	4
Forensic Science (BS)	262	43.0106	4
Minor in Biology for Forensic Science	252M	-	-
Minor in Forensic Science	262A	-	-
General Business Administration (BBA)	121	52.0201	4
Minor in Social Network Management	121M	-	-
General Studies (AA)	A254	24.0102	2
Graphic Design (AVA)	075	50.0409	2
Graphic Design (BVA)	B001	50.0409	4
Health Sciences (BS)			
Administration	255	51.2211	5
Education	260	51.2207	5
Health Services Administration	B251	51.0702	4
History (BA)	109	54.0101	4
Minor in History	109A	-	-
Minor in Puerto Rican History and Literature	109B	-	-
Hotel and Restaurant Management (BBA)	227R	52.0904	5
Minor in Hotel and	227M	-	-

Restaurant Management			
Human Resources Management (BBA)	214	52.1001	4
Minor in Human Resources Management	214M	-	-
Humanities Studies (BA)	137	24.0103	4
Industrial Chemistry (BS)	259	40.0599	5
Minor in Agricultural Chemistry	259B	-	-
Minor in Industrial Chemistry	259A	-	-
Minor in Chemistry	132M	-	-
Information Technology (BBA)	287	11.0103	5
Institutional Chaplaincy (AA)	088I	39.0701	2
Managerial Economics (BBA)	167	52.0601	4
Minor in Managerial Economics	167M	-	-
Marine Sciences (BS)	B522	26.1302	4
Minor in Marine Sciences	180M	-	-
Marketing (BBA)	149	52.1401	4
Minor in Communications and Public Relations	149M	-	-
Minor in Insurance Sales	149C	-	-
Minor in Marketing	149F	-	-
Minor in Sales	149S	-	-
Minor in Sport Marketing	149B	-	-
Marketing for Digital Media (BBA)	B253	09.0702	4
Mathematics (BA)	111	27.0101	4
Minor in Statistics	111E	-	-

Mathematics (BS)	210	27.0101	4
Medical Emergencies (AS)	A457	51.0904	2
Medical Emergencies (BS)	B527	51.0904	4
Medical Sonography in Cardiovascular Sonography (BS)	284	51.0901	5
Minor in Skeletal Muscle Sonography	273A	-	-
Medical Technology (BS)	165	51.1005	5
Microbiology (BS)	268	26.0502	5
Minor in Microbiology	268M	-	-
Modern Language	B005	16.0101	4
Multidisciplinary Studies (AA)	A253	30.9999	4
Multidisciplinary Studies (BA)	292	30.9999	4
Minor in Multidisciplinary Studies	292A	-	-
Music (BA)	112	50.0903	4
Music (BM)			
Applied Music	190	50.0903	4
Music Education: General - Vocal	192	13.1312	5
Music Education: Instrumental	191	13.1312	5
Minor in Music	190A	-	-
Minor in Music History	190B	-	-
Minor in Music Theory	190C	-	-
Music Business Management (A)	063A	50.1003	2
Music Enterprises Management (BBA)	B252	50.1003	4
Natural Sciences (BS)	293	30.1801	4
Networks and	269	11.0901	4

Telecommunications (BS)				Political Science (BA)	114	45.1001	4
Minor in Networks and Telecommunications	269M	-	-	Minor in Government Management	114N	-	-
Nursing (AAS)	061	51.3901	2	Minor in Human and Civil Rights	114H	-	-
Nursing (BSN)	150	51.3801	4	Minor in International Relations	114M	-	-
Minor in Gerontology for Nursing	150M	-	-	Minor in Legal Affairs	114L	-	-
Minor in Management for Nursing	212M	-	-	Minor in Political Science	114P	-	-
Occupational Therapy (AS)	061B	51.0803	3	Popular Music (A)	087	50.0903	3
Office Systems Management (AA)	090	52.0204	2	Popular Music (BA)	232	50.0903	4
Office Systems Management (BA)	249	52.0204	4	Minor in Anthropology and History of Music	232A	-	-
Minor in Administration of Electronic Medical Records	249R	-	-	Minor in Contemporary Dance Music	232B	-	-
Minor in Office Systems Management	249M	-	-	Minor in Performing Arts	232C	-	-
Operations Management of Manufacturing and Services (BBA)	B254	52.0205	4	Minor in Sacred Music	232M	-	-
				Psychology (BA)	115	42.0101	4
Minor in Operations Management of Manufacturing and Services	B25M	-	-	Minor in Community Psychology	115C	-	-
				Minor in General Psychology	115G	-	-
Optical Sciences Technology (AAS)	089	51.1802	3	Minor Intervention and Stabilization of Clients in Crisis Situations	115M	-	-
Organizational Behavior (BBA)	B26D	52.1003	5	Minor in Psychology	115P	-	-
Pharmacy Technician (AAS)	092	51.0805	3	Minor in Psychology and Labor Affairs	115L	-	-
Photography (A)	097	50.0605	2	Minor in Psychology and Mental Health	115H	-	-
Physical Therapist Assistance (AS)	061P	51.0806	3	Minor in School Psychology	115S	-	-
Police Science (AA)	095P	43.0107	2	Radiological Sciences in Computerized Tomography and Magnetic Resonance	273	51.0911	5

(BS)

Minor in Skeletal Muscle Sonography	273A	-	-
Radiological Technology (AAS)	073	51.0907	3
Radiological Technology in Mammography and Angiography (BS)	274	51.0911	5
Real Estate (BBA)	288	52.1501	4
Minor in Real Estate	288M	-	-
Recreation for Elderly Persons (AA)	A255	51.0001	2
Renewable Energy Technology with Photovoltaic Systems (AA)	A460	15.1703	3
Restaurant and Food Services Administration (AAS)	058F	19.0505	2
Social Sciences (BA)	119	45.0101	4
Social Work (BA)	118	44.0701	4
Minor in Gerontology for Social Work	118M	-	-
Spanish (BA)	107	16.0905	4
Minor in Bilingual Oral and Written Communication	107C	-	-
Minor in Oral and Written Communication	107B	-	-
Minor in Spanish	107A	-	-
Minor in Strategic Languages	107M	-	-
Special Education Services Assistant (AA)	A256	13.1099	2
Speech and Language Therapy (BS)	281	51.0203	4
Sports and Fitness Management (BA)	278	31.0504	4
Sports Technology	189	31.0504	4

(BA)

Minor in Coaching and Sports Physical Training	189M	-	-
Minor in Sports Technology	189T	-	-
Studies in Religion (AA)	088	38.0201	3
Studies in Religion (BA)	239	38.0201	4
Minor in Biblical Studies	239B	-	-
Minor in Practical Theology	239M	-	-
Tourism			
Tourist Guide (AAS)	081	52.1905	2
Tourism Management (BBA)	279	52.0903	4
Minor in Tourism Management	279M	-	-
Toxicology (BS)	B531	26.1004	4
Minor in Toxicology	531M	-	-
Veterinary Technician (AAS)	A454	51.0808	2
Veterinary Technology (BS)	B533	01.8301	4
Veterinary Technology with Pre-Veterinary (BS)	B532	01.1302	2
Videogames and Mobile Applications	A458	50.0411	4

Professional Certificates

Entrepreneurial Development (Professional Post-Associate Certificate)	058A	52.0701	-
Medical Technology (Professional Post-Bachelor's Degree)	135	51.1005	-

Online Education: Associates and Bachelors

Accounting (AAS)	060D	52.0301	2
Biology (BS)	180D	26.0101	4

Business Administration (AAS)	093	52.0201	2		Technology			
Computer Science (AAS)	054D	11.0701	2		International Business (BBA)	233D	52.1101	5
Computer Science (BS)	120D	11.0701	5		Minor in International Business	233M		
Criminal Justice: Criminal Investigation (BA)	194A	43.0104	4		Management and Organizational Innovation (BBA)	253D	52.0201	4
Minor in Criminal Investigation	194M	-	-		Minor in Management and Organizational Innovation	253M		
Criminology (BSS)	143D	45.0401	4					
Minor in Criminology	143M	-	-		Mathematics (BA)	111D	27.0101	4
Education (Teacher Education) (BA)					Marketing (BBA)	149A	52.1401	5
Early Childhood: Pre-School Level	243D	13.1209	4		Minor in Marketing	149F	-	-
					Minor in Sales	149S	-	-
Early Childhood: Elementary Primary Level (K-3)	236D	13.1202	4		Marketing for Digital Media (BBA)	B52D	09.0702	4
Early Childhood: Elementary Primary Level (4-6)	237D	13.1202	4		Office Systems Management (AA)	090A	52.0204	2
School Health	267D	13.1299	4		Office Systems Management (BA)	249A	52.0204	4
Secondary Education: Spanish	145D	13.1330	5		Minor in Administration of Electronic Medical Records	249R	-	-
Special Education	136D	13.1001	4					
Teach English as a Second Language at the Secondary Level	147D	13.1401	4		Minor in Office Systems Management	249M	-	-
Entrepreneurial and Management Development (BBA)	275D	52.0701	4		Operations Management of Manufacturing and Services (BBA)	B50D	52.0205	4
Finance (BBA)	222	52.0801	4		Minor in Operations Management of Manufacturing and Services	286M	-	-
Minor in Finance	222F	-	-					
Minor in Real Estate	288M	-	-		Psychology (BA)	115D	42.0101	4
Forensic Informatics (AAS)	A45D	11.1003	2		Minor in Psychology	115P	-	-
Human Resources Management (BBA)	214A	52.1001	4		Sales (AAS)	098D	52.1899	2
Information Technology (BBA)	287D	11.0103	5		Security Management (BS)	B52D	11.1003	4
Minor in Information	287M				Minor in Security Management	52DM		

Social Work (BA)	118D	44-0701	4
Studies in Religion (AA)	088D	38.0201	3
Studies in Religion (BA)	239D	38.0201	4
Minor in Biblical Studies	239B	-	-
Minor in Practical Theology	239M	-	-
Online Education: Professional Certificates			
Entrepreneurial Development (Professional Post-Associate Certificate)	058D	52.0701	

Subject Codes Used in Catalog and in the System

Subject	Subject Codes
Accounting	ACCT
Agricultural Technology	APTE
Agronomy	AGRO
Airway Sciences	AWSC
Anthropology	ANTH
Application Development	ADEV
Arabic	ARAB
Archeology	ACHA
Architectural Engineering	REN
Art Education	ARED
Auditing	AUDI
Basic Skills: Information and Computing (General Education)	GEIC
Basic Skills: English (General Education)	GEEN
Basic Skills: Mathematics (General Education)	GEMA
Basic Skills: Spanish (General Education)	GESP
Bioinformatics	BIIN
Biology	BIOL
Biomedical Sciences	BMSC
Biopsychology	BIPS
Biotechnology	BIOT
Business Administration	BADM
Cardio-Respiratory Care	CARD
Chemistry	CHEM
Christian Thought (General Education)	GECF
Communications, Photography and Communication in Media Production	COMU
Computer Engineering	COEN
Computer Science	COMP
Computer Technology and Networks	COTN
Computerized Tomography and Magnetic Resonance	CTMR
Contemporary Dance	DANC
Cooperative Education	COED
Criminal Justice and Criminal Investigation	CJUS
Criminology	CRIM
Culinary and Gastronomic Sciences	GASC
Cyber Crime	CYBE
Design	DSGN
Design and Development of Video-Games	GAME
Digital Graphic Design and Multimedia	DGDM
Education	EDUC
Educational Computing	ECMP
Electrical Engineering	ELEN
Electronic Commerce	ECOM
Electronic Engineering Technology	ELEC
Engineering (General)	ENGR
English	ENGL
Entrepreneurial and Managerial Development	ENTR
Entrepreneurial Culture (General Education)	GEEC
Entrepreneurial Development	ENDE
Environmental Sciences	EVSC

Environmental Technology	EVTH	Mathematics	MATH
Finance	FINA	Mechanical Engineering	MECN
Fine Arts	ARTS	Medical Emergencies	MEEM
Forensic Science, Forensic Informatics, and Forensic Biology	COMF/FORS	Medical Sonography	SONO
		Medical Technology	MEDT
French	FREN	Microbiology	MICR
Geography	GEOG	Mobile Device Programming	MOPR
German	GERM	Music, Applied Music, and Popular Music	MUSI
Gerontology	GERO		
Health, Physical Education and Recreation	HPER	Music Business Management	MUBA
		Music Education	MUED
Health Sciences	HESC	Nanotechnology	NANO
Health Services Administration	HCAD	Natural Sciences	NASC
Health and Quality of Life (General Education)	GEHP	Networks and Telecommunications	NTEL
		Nursing	NURS
Historical and Social Context (General Education)	GEHS	Occupational Therapy	OCTH
History	HIST	Office Systems Management	OMSY
Hotel and Restaurant Management	HRMT	Operation Management of Manufacturing and Services	OPMS
Industrial Engineering	INEN		
Information Technology	ITEC	Optical Sciences Technology	OPST
Institutional Chaplaincy	CHAP	Pharmacy Technician	PHAR
Insurance	INSR	Philosophic and Esthetic Thought (General Education)	GEPE
International Business	INTB		
Italian	ITAL	Philosophy	PHIL
Landscape Design	LADE	Physical Therapy Assistant	PHTH
Latin	LATI	Physics	PHYS
Linguistics	LING	Political Science	POLS
Management and Organizational Innovation	MGOI	Portuguese	PORT
		Psychology	PSYC
Managerial Economics	MAEC	Psychosocial Human Services	HUSE
Mandarin	MAND	Public Administration	PUAD
Marine Sciences	MASC	Radiological Technology	RATE
Marketing	MKTG	Real Estate	REAL
Marketing and Sales	MAMS	Recreational and Sports Facilities Management	SRIM
Marketing for Digital Media	MDME		
Materials Management	MMAT	Religion	RELI
		Reserve Officers Training Corps:	MISC

Military Science

Reserve Officers Training Corps: Aerospace Studies	AEST
Russian	RUSS
Scientific and Technological Context (General Education)	GEST
Security	SECU
Small Business Administration	SBAD
Social Work	SOWO
Sociology	SOCI
Spanish	SPAN
Speech and Language Therapy	SPTH
Statistics	STAT
Tourism	TURI
Toxicology	TOXI
Veterinary Technician	VETC
Videogames and Mobile Applications	VGMA

Course Codification System

This system consists of a four letter alphabetical section that identifies the discipline named in English, and a four digit numerical section that identifies the course level, the course itself and the course sequence if such exists.

The first digit indicates the level of complexity of the course. This is closely associated with the year of university studies in which students would normally take the course. The digits from 0 to 4 are used to identify the complexity of the courses as follows:

    0 - Preuniversity Certificate Program courses
    1 - First level undergraduate courses
    2 - Second level undergraduate courses
    3 - Third level undergraduate courses
    4 - Fourth level undergraduate courses

The second and third digits are used to identify courses within the same level.

The fourth digit indicates the course sequence of two courses within the same level or indicates that no sequence exists. Sequence is indicated by the digits 1 and 2.

In addition to the meaning ascribed to individual digits, combinations in the first three digits indicate a special type of course as explained below:

1. The use of zero (0) as the first digit indicates a Preuniversity Certificate Program course.

2. The following combinations in the first three digits indicate a special type of course as explained below:

   a. **Associate Degrees**

      i. The combination 197 is used to identify Special Topics in all disciplines.

      ii. The combination 291 is used to identify supervised practicums or internships.

      iii.   The combination 297 is used to identify seminars whose titles are not specified in the Catalog.

   b. **Bachelors' Degrees**

      i. The combination 397 is used to identify Special Topics in all disciplines.

      ii. The combination 491 is used to identify supervised practicums or internships.

      iii.   The combination 497 is used to identify seminars whose titles are not specified in the Catalog.

General Education Program

The university curriculum is composed of three interrelated components, which include general education program courses, major requirements courses, and elective courses, which are aimed to develop a person with the competencies for a diverse and globalized social and labor context. Other courses categories may be included in different programs.

The Inter American University of Puerto Rico offers a General Education Program that, independent of the study program selected by the student, contributes to the achievement of the following goals and competencies.

Goals and Competencies of the General Education Program

The General Education Program of the Inter American University of Puerto Rico is based on the following goals and competencies. These aim to develop professionals with the knowledge, skills, and attitudes necessary for a diverse and changing society and work environment in the globalized world of the 21st century.

Goal I: Develop a person with humanistic sensitivity, capable of contributing to the solution of problems with a collaborative attitude, using research, critical, creative and innovative thinking in an international context.

- Competency 1: Demonstrate a critical, creative, scientific, humanistic, ethical and aesthetic attitude for the solution of problems, based on the use of research methods, sources of information, and technological advances.

- Competency 2: Demonstrate capability and willingness for collaborative work and negotiation.

Goal II: Develop a person with communicative competence in Spanish and English, with native-language mastery of one of the two languages.

- Competency 3: Demonstrate competency in oral and written communication skills in Spanish and English, with a higher level of mastery in the first language.

Goal III: Develop a person who values diversity, appreciates other cultures, is aware of their social, ethical, civic, and environmental responsibility and exerts leadership in a democratic context.

- Competency 4: Demonstrate leadership qualities, appreciation for other cultures, and respect and appreciation of diversity.

- Competency 5: Demonstrate commitment to social, ethical, civic, and environmental responsibility.

Goal IV: Develop a person who understands and values Christian faith from an ecumenical openness and its implications for culture.

- Competency 6: Apply the principles that define a culture of peace from an ecumenical-Christian, interreligious, multicultural, and academic perspective.

- Competency 7: Demonstrate respect and sensitivity towards religious plurality and other beliefs.

Goal V: Develop a person committed to the integral health, well-being, and quality of life of the individual and society.

- Competency 8: Apply the fundamental knowledge of integral health to promote the welfare and quality of life of the individual and society.

Goal VI: Develop a person capable of solving problems through scientific thinking, logical and quantitative reasoning, and the use of information and communication technologies, in an ethical, critical, creative, and innovative way.

- Competency 9: Apply scientific thinking and logical and quantitative reasoning for decision-making and problem-solving.

- Competency 10: Use information and communication technologies for decision-making and problem-solving.

Goal VII: Develop a person with knowledge of the historical, social, and cultural context of Puerto Rico and the world.

- Competency 11: Understand the historical, political, social, and economic processes and their effects and implications in the formation of contemporary societies.

- Competency 12: Value the historical, social, and cultural differences that have contributed to forge the knowledge society.

Goal VIII: Develop a person who has an entrepreneurial attitude and is committed to lifelong learning.

- Competency 13: Demonstrate capability for self-management, entrepreneurship, and lifelong learning in the face of social and economic changes in a global world.

General Education Categories and Course Descriptions

General Education Categories and Course Descriptions

The General Education Program (GEP) requires 48 credits for the Bachelor and 24 for the associate degrees. It is designed so that the student takes the courses from the different categories distributed throughout his study program. Some academic programs exempt their students from a GEP course or category. In these cases, the total required credits will be lower.

Basic Skills

Basic Skills - 24 credits

Basic Skills: Spanish – 9 credits

Three (3) courses in Spanish in the established sequence are required for a total of nine (9) credits. The courses GESP 1101, 1102, and 2203 will be supported by an open laboratory (virtual).

For students whose native language is not Spanish, GESP 1021, 1022, and 2023 are the required courses. These courses will be supported by an open language and/or virtual laboratory.

GESP 1021 BASIC SPANISH AS A FOREIGN LANGUAGE
Study of the basic communication skills in Spanish. Emphasis on the acquisition of vocabulary and the learning of basic grammatical structures to achieve an adequate oral and written communication. Reading and writing of simple texts. Requires additional laboratory hours.
3 credits

GESP 1022 INTERMEDIATE SPANISH AS A

FOREIGN LANGUAGE
Development of communication skills in Spanish. Study of grammatical aspects of the language and vocabulary enrichment for daily use. Reading and writing texts of intermediate complexity. Emphasis on writing descriptive and narrative texts. Requires additional laboratory hours. Prerequisite: GESP 1021.
3 credits

GESP 2023: ADVANCED SPANISH AS A FOREIGN LANGUAGE
Study of Spanish as a Foreign Language through diverse readings to promote critical and creative competence. Study of advanced level grammatical structures. Emphasis on the writing of expository and argumentative texts. Continuous practice of oral communication skills. Requires additional laboratory hours. Prerequisite: GESP 1022 or its equivalent.
3 credits

GESP 1101 LITERATURE AND COMMUNICATION: NARRATIVE AND POETRY
Development of communicative competence through the interpretation and critical analysis of narrative, poetic, and non-literary texts. Oral and written practices of the different modes of discourse. Emphasis on the development of linguistic competence. Requires additional hours of virtual open laboratory. Core course.
3 credits

GESP 1102 LITERATURE AND COMMUNICATION: ESSAY AND THEATRE
Development of communicative competence through the interpretation and critical analysis of essays, plays, and non-literary texts. Oral and written practices of expository and argumentative texts. Emphasis on the development of discursive competence. Requires additional hours of virtual open laboratory. Prerequisite: GESP 1101. Core course.
3 credits

GESP 2203 LITERATURE AND WORLD VIEW
Study of literature to interpret reality. Emphasis on the development of advanced oral and written communication skills. Includes a selection of universal literature works representative of different themes and periods. Requires additional hours of virtual open laboratory. Prerequisite: GESP 1102. Core course.
3 credits

Basic Skills: English - 9 credits

It is required to take three consecutive English courses, of the same level, for a total of nine (9) credits. This curriculum is divided into three levels: elementary,

intermediate, and advanced. Students will be placed in the levels, according to their English section score on the PAA test (or its equivalent).

This placement will be made according to the following scores: elementary level, a score up to 440; intermediate level, scores from 441 to 580; advanced level, scores of 581 or above. Special cases, such as transfers from universities or other higher education systems that do not require PAA testing, as well as readmitted students who have not taken the basic skills requirements in English, will be required to have an interview with the director of the English Department or the designated person, for their placement in the corresponding level. The elementary level courses (GEEN 1101, 1102 and 1103) and those of the intermediate level (GEEN 1201, 1202 and 1203) require additional hours of virtual open laboratory.

GEEN 1101 ENGLISH AS A SECOND LANGUAGE I: ORAL COMMUNICATION
Development of English as a Second Language auditory and oral communication skills. Practice of formal and informal speech in everyday social and professional situations at local, national, and global settings. Discussion of fundamental aspects of the oral communication process. Reading and writing of simple texts and structures. Development of basic English vocabulary and grammatical structures. Requires completion of a virtual laboratory component. Required course.
3 credits

GEEN 1102 ENGLISH AS A SECOND LANGUAGE II: READING
Development of English as a second language reading skills through the analysis of different types of texts. Use of reading strategies to construct meaning and understanding of readings. Vocabulary acquisition in context. Introduction to the writing process and the paragraph structure. Practice in listening and oral communication skills. Requires completion of a virtual laboratory component. Prerequisite: GEEN 1101. Required course.
3 credits

GEEN 1103 ENGLISH AS A SECOND LANGUAGE III: WRITING
Development of English as a second language basic writing skills. Application of the writing process to produce simple paragraphs and other written texts with varied methods of organization and structure. Improvement of listening, speaking, and reading skills. Acquisition of vocabulary in context. Requires completion of a virtual

laboratory component. Prerequisite: GEEN 1102. Required course.
3 credits

GEEN 1201 ENGLISH COMMUNICATION I
Discussion of appropriate use of language in an academic context. Development of oral communication skills to articulate ideas and respond effectively according to context, purpose, and audience. Interpretation of authentic text and multimedia sources through application of critical thinking, reading, and writing. Requires completion of a virtual laboratory component. Required course.
3 credits

GEEN 1202 ENGLISH COMMUNICATION II
Application of critical reading skills to analyze texts. Interpretation of readings to explore content from multiple perspectives and to develop informed arguments. Writing of essays and refinement of speaking skills in an academic context. Requires completion of virtual laboratory component. Prerequisite: GEEN 1201. Required course.
3 credits

GEEN 1203 ENGLISH COMMUNICATION III
Development of research skills to foster academic inquiry. Application of critical reading and thinking skills to the research process. Integration of the principles of research writing in the development of a documented essay. Requires completion of virtual laboratory component. Prerequisite: GEEN 1202. Required course.
3 credits

GEEN 2311 READING AND WRITING
Reading and analysis oriented toward essay writing. Emphasis on organizational skills, writing as a process, and the various types of writing modes. Vocabulary acquisition in context. Required course. Requirement: Score of 600 or above on the CEEB. Students who have not taken the CEEB will follow an alternate placement procedure.
3 credits

GEEN 2312 LITERATURE AND WRITING
Study of culturally and historically diverse literature through readings in fiction, drama, and poetry. Students will write essays presenting critical readings of literary texts. Prerequisite: GEEN 2311. Required course.
3 credits

GEEN 2313 RESEARCH AND WRITING
The planning, research process, and writing of academic works. Emphasis on skills for searching, comprehension, evaluation, and effective use of information. Vocabulary

acquisition in context.   Prerequisite: GEEN 2312. Required course.
3 credits

Basic Skills: Mathematics - 3 credits

Students will take 3 credits in math. The courses will be supported by a virtual open laboratory.

Students in programs that require course GEMA 1200, are exempt to take that course if a score of 520 or higher is obtained on the Math section of the PAA test.

GEMA1000 QUANTITATIVE REASONING
Study of the set of real numbers, measuring systems, geometry (length, area and volume), equation solving for linear variables that include ratios, proportions, mathematical financial formulas and literal equations. Basic concepts of statistics: frequency distribution, graphs, measures of central tendency, dispersion and probability principles. Requires additional hours of virtual open laboratory.
3 credits

GEMA 1001 MATHEMATICS FOR TEACHERS I
Application of the fundamental topics of numeration and operation, data analysis and probability. Emphasis on the development of content through problem solving. Includes communication in mathematics, mathematical reasoning, representation, the integration of mathematics with other subject areas, the integration of the cross-sectional topics of the curriculum, and the integration of available technology as a working tool. This course is designed for elementary school teachers. A minimum grade of C is required to pass this course. Requires additional hours of virtual open laboratory.
3 credits

GEMA 1002 MATHEMATICS FOR TEACHERS II
Application of the fundamental topics of measuring, geometry and algebra. Emphasis on the development of content through problem solving. Includes communication in mathematics, mathematical reasoning, representation, the integration of mathematics with other subject areas, the integration of the cross-sectional topics of the curriculum, and the integration of available technology as a working tool. This course is designed for elementary school teachers. A minimum grade of C is required to pass this course. Requires additional hours in a virtual open laboratory. Prerequisite: GEMA 1001.
3 credits

GEMA 1200 FUNDAMENTALS OF ALGEBRA
Application of algebra to problem solving, including graphic and symbolic representations. Study of algebraic expressions with whole and rational exponents; and of polynomials, operations, and factoring. Solution of first and second degrees equations, of equations with rational and radical expressions, and of linear inequations. Requires additional hours of virtual open laboratory.
3 credits

Basic Skills: Information and Computing - 3 credits

Students will take 3 credits in this category. The course will be supported by a virtual open laboratory.

GEIC 1010 INFORMATION AND COMPUTING TECHNOLOGIES
Development of skills for processing information by means of the computer. Use of computer programs to establish electronic communication of bibliographic databases, web browsers, operating systems, word processors, electronic graphical presentations, and spreadsheet calculations. Requires additional hours of virtual open laboratory. Core course.
3 credits

Christian Thinking - 3 credits

Students will take 3 credits in this category.

GECF 1010 INTRODUCTION TO THE CHRISTIAN FAITH
Study of the Christian religion in a global and pluralistic context, from a social, historical perspective and an ecumenical orientation. Discussion of the Bible's general content, with emphasis on the reflection on the person and the contributions of Jesus of Nazareth, as a model of life and change promoter. Introduction to Christian theology, in accord with other disciplines and currents of thought. Promotes commitment to others, community service and respect for others, congruent with the universal values of the Gospels. Core course.
3 credits

Entrepreneurial Culture - 3 credits

Students will take 3 credits in this category.

GEEC 2000 ENTREPRENEURIAL CULTURE
Discussion of aspects that foster the development of attitudes and mentality aimed at taking initiatives, identifying opportunities, and addressing challenges of personal, social, and economic settings to promote an entrepreneurial culture. Core course.

3 credits

Philosophical and Aesthetic Thought - 6 credits

Students will take 6 credits in this category. The GEPE 4040 is a core course.

Students in the Engineering and Aviation programs will only take the GEPE 4040 course in this category.

GEPE 3010 ART APPRECIATION
Study of a general panorama of the creative process and the relationship of the artist with his work; the work of art and its importance for the viewer through an appreciative process. Emphasis on the foundations, functions, vocabulary, techniques, and materials of the visual arts. Study of art topics in different periods and the development of the arts in Puerto Rico. Promotes student participation in visits to museums and galleries. Prescribed distributive course.
3 credits

GEPE 3020 MUSIC APPRECIATION
Study of the multiple functions of music in society through the gradual development of auditory perception. Promotes the appreciation and enjoyment of local and international music, as well as the music from past European societies and those of the Americas, from the 19th century to the present day. Prescribed distributive course.
3 credits

GEPE 3030 THEATRE APPRECIATION
Study of the fundamentals of the performing arts and their incorporation to life in society. Integration of the elements for the analysis of the performing arts, allowing for the development of a critical and evaluative exercise of these. Theoretical revision of theatrical production milestones from its origins to the present, both in dramaturgy as in staging. Prescribed distributive course.
3 credits

GEPE 4040 ETHICS AND SOCIAL RESPONSIBILITY
Critical analysis on the ethics of responsibility in its multiple dimensions. Emphasis on the meaning of ethical knowledge in the post-modernity context. Includes the study of environmental and socio-political responsibility, the criteria for responsible ethics, as well as the criteria and proposals for an ethic of coexistence and solidarity action. A communitarian service project is required. Core course.
3 credits

Historical and Social Context - 6 credits

Students will take 6 credits in this category. The GEHS 2010 course is a core requirement.

However, international students will have the option of selecting the 6 credits of their preference from the courses in this category.

Historical Component

GEHS 2010 HISTORICAL PROCESS OF CONTEMPORARY PUERTO RICO
Analysis of the historical process of contemporary Puerto Rico through the study of its economic, political, social, and cultural transformations that have been transcendental in its development and in its relations with the World. Emphasis on the period covering from the 19th century to the present. Core course.
3 credits

GEHS 4020 ANCIENT AND MEDIEVAL WESTERN CIVILIZATION
Analysis of the most outstanding economic, political, social and cultural processes of Western civilization from the appearance of human beings to the end of the Middle Ages. Prescribed distributive course.
3 credits

GEHS 4030 MODERN AND CONTEMPORARY WESTERN CIVILIZATION
Analysis of the most outstanding economic, political, social, and cultural processes of modern and contemporary western civilization. Prescribed distributive course.
3 credits

Social Component

GEHS 3020 GLOBAL SOCIETY
Study of the global society from a political and economic perspective; and its social, cultural and geographical impact. Emphasis on the analysis of challenges and problems of the contemporary world. Prescribed distributive course.
3 credits

GEHS 3050 HUMAN FORMATION, SOCIETY, AND CULTURE
Analysis of the processes of formation, organization, and adaptation of human beings from the psychological, sociological, and anthropological perspectives. Emphasis on the impact of biopsychosocial systems, cultural processes, and social changes in human behavior. Prescribed distributive course.
3 credits

Scientific and Technological Context - 3 credits

Students will take 3 credits in this category.

Students studying for the Bachelor of Arts in Secondary Education in Biology or Chemistry, must take the GEST 2030 course.

GEST 2020 THE NATURAL ENVIRONMENT AND THE HUMAN BEING
Application of the scientific method to the study of human beings' interactions with the natural environment. The scientific perspective of the origin of life and natural selection as a mechanism for evolution is identified. Study of the relationship between human activities and their impact on the environment. Emphasis on identifying actions as problem solutions as well as means for improving the quality of the environment. Prescribed distributive course.
3 credits

GEST 2030 TECHNOLOGY AND ENVIRONMENT
Identification of the fundamental concepts of science and the impact of technology on the environment. Distinction of energy sources and their economic and environmental implications. Study of the relationship of climatological phenomena with human activities. Evaluation of the impact of technological development on human beings and their environment. Prescribed distributive course.
3 credits

Health and Quality of Life - 3 credits

Students will take 3 credits in this category.

Students of the Nursing Program are exempted from this category.

GEHP 3000 INTEGRAL HEALTH AND QUALITY OF LIFE
Study of the dimensions of integral health and its effect on psychomotor, cognitive, and affective parameters. Emphasis on the scientific evidence regarding knowledge related to integral health, physical fitness, nutrition, and stress response. Individual and community responsibility in healthy lifestyles is highlighted. Includes physical activity, exercise, recreation, and sports as preventive or therapeutic health strategies. The course provides practical experiences. Core course.
3 credits

Explanatory note:

Foreign language teaching

The teaching of foreign languages contributes to the internationalization of the curriculum. In addition, it encourages the development of historical, social, and cultural competencies, since the learning of a foreign language requires the sociocultural context of the country whose vernacular is taught as a foreign language in the Institution.

Accordingly, students interested in taking courses in foreign languages, such as French, Portuguese, Italian, German, and Mandarin, among others, may take two courses (6-8 credits) as part of their general academic training. These courses will be replaced by six (6) credits of GEP prescribed courses, specifically: three (3) of the Philosophical and Aesthetic Thought category and three (3) of the Historical and Social Context category.

General Education Requirements for Associate Degrees

General Education Requirements for Associate Degrees - 24 credits

GESP Spanish	6 credits
GEEN English	6 credits
GEMA Mathematics	3 credits
GECF 1010 Introduction to the Christian Faith	3 credits
GEIC 1010 Information and Computing Technologies	3 credits
GEHS 2010 Historical Process of Contemporary Puerto Rico	3 credits
or	
GEEC 2000 Entrepreneurial Culture	3 credits

General Education Requirements for Bachelors' Degrees

General Education Requirements for Bachelors' Degrees

General Education Requirements for Bachelors' Degrees - 48 credits

Basic Skills: 24 credits

Basic Skills: Spanish	9 credits
Basic Skills: English	9 credits
Basic Skills: Mathematics	3 credits
Basic Skills: Information and Computing	3 credits

Philosophical and Aesthetic Thought: 6 credits

GEPE 4040 Ethics and Social Responsibility	3 credits

Select one course from the following:

GEPE 3010 Art Appreciation	3 credits
GEPE 3020 Music Appreciation	3 credits
GEPE 3030 Theatre Appreciation	3 credits

Christian Thought: 3 credits

GECF 1010 Introduction to the Christian Faith	3 credits

Entrepreneurial Culture: 3 credits

GEEC 2000 Entrepreneurial Culture	3 credits

Historical and Social Context: 6 credits

GEHS 2010 Historical Process of Contemporary Puerto Rico	3 credits

Select one course from the historical or social component:

Historical Component

GEHS 4020 Ancient and Medieval Western Civilization	3 credits
GEHS 4030 Modern and Contemporary Western Civilization	3 credits

Social Component

GEHS 3020 Global Society	3 credits
GEHS 3050 Human Formation, Society, and Culture	3 credits

Explanatory Note:

International students will have the option of selecting the 6 credits of their preference from the courses in this category.

Scientific and Technological Context - 3 credits

Select one course from the following:

GEST 2020 The Natural Environment and the Human Being	3 credits
GEST 2030 Technology and Environment	3 credits

Health and Quality of Life - 3 credits

GEHP 3000 Integral Health and Quality of Life	3 credits

Explanatory note:

Foreign language teaching

The teaching of foreign languages contributes to the internationalization of the curriculum. In addition, it encourages the development of historical, social, and cultural competencies, since the learning of a foreign language requires the sociocultural context of the country whose vernacular is taught as a foreign language in the

Institution.

Accordingly, students interested in taking courses in foreign languages, such as French, Portuguese, Italian, German, and Mandarin, among others, may take two courses (6-8 credits) as part of their general academic training. These courses will be replaced by six (6) credits of GEP prescribed courses, specifically: three (3) of the Philosophical and Aesthetic Thought category and three (3) of the Historical and Social Context category.

Categories of the General Education Program

The General Education Program of the Inter American University of Puerto Rico comprises the following seven categories.

Basic Skills: This category develops competencies in the following areas: Spanish and English communication skills, mathematics, and information and computer technologies.

Christian Thought: This category develops the competencies that allow the understanding and appreciation of Christian faith from an ecumenical openness.

Entrepreneurial Culture: This category develops the competencies for the formation of a person with an entrepreneurial attitude and capability for self-management and entrepreneurship in the context of a globalized society.

Philosophical and Aesthetic Thought: This category develops competencies related to ethics, social responsibility, and musical, artistic, and theatrical appreciation.

Historical and Social Context: This category develops the fundamental competencies of history and social sciences to allow the understanding of society in a local and global context.

Scientific and Technological Context: This category develops the fundamental competencies for the study and understanding of the interrelation between the natural sciences, the environment, technology and the human being. It also encourages the development of a responsible ecological attitude.

Health and Quality of Life: This category develops competencies that contribute to integral health, quality of life, and healthy individual and collective lifestyles.

Programs of Study: Undergraduate (Associate and Bachelor's) Degrees

Accounting (AAS)

The Associate of Applied Sciences Degree in Accounting offers students the opportunity to develop the fundamental skills and knowledge in the accounting field. It provides the technical preparation that allows Program graduates to perform basic tasks in the accounting field. This program offers the student the opportunity to continue studies leading to the Bachelor's Degree.

Students must pass the required major courses with a minimum grade of C.

All campuses are authorized to offer this Program. The Aguadilla, Bayamón, Guayama and Ponce campuses are also authorized to offer this Program through online education.

Competencies Profile of Graduates

This Program is designed to develop the competencies that will enable students to:

Knowledge

Knowledge and understanding of:

1. the accounting theory using as its base the generally accepted principles of financial accounting in the national and international environment.

2. the state tax legislation.

3. the theory of managerial and cost accounting for their application in organizations.

4. the information and communication technology used in accounting processes.

5. the legal responsibility, the ethical principles and the Code of Ethics of the accounting profession.

Skills

1. Apply the theory and the principles of financial accounting to prepare, analyze and report on the economic results and the financial situation of the organization.

2. Apply the provisions of the Code of Internal Revenue of Puerto Rico and the United States (federal) and their amendments to determine the taxes of the individual.

3. Apply the theory of managerial and cost accounting and for the accumulation, allocation, communication of results and analysis for decision making.

4. Analyze the accumulation of costs for the purpose of planning, implementing and controlling the operations of the company.

5. Use information and communication technology related to the accounting profession.

Attitudes

1. Value the importance of continuous learning to stay competent in the profession.

2. Demonstrate an ethical conduct in the different scenarios that you are in.

3. Demonstrate interest in participating in professional activities that contribute to your academic and professional development, such as workshops, lectures, seminars, professional contests encounters, internships.

Requirements for the Associate of Applied Science Degree in Accounting

General Education Requirements	24 credits
Major Requirements	34-35 credits
Elective Courses	3 credits
Total	61-62 credits

General Education Requirements - 24 credits

GESP	Spanish - Select 6 credits from the GESP category	6
GEEN	English - Select 6 credits from the GEEN category	6
GEP-GEMA 1200	Fundamentals of Algebra	3
GEP-GECF 1010	Introduction to the Christian Faith	3
GEP-GEIC 1010	Information and Computing Technologies	3

| GEP-GEHS 2010 | Historical Process of Contemporary Puerto Rico Or | 3 |
| GEP-GEEC 2000 | Entrepreneurial Culture | 3 |

Major Requirements - 34-35 credits

ACCT 1161	Introduction to Financial Accounting	4
ACCT 3041	Puerto Rico Tax System for Individuals Or	4
ACCT 3085	Federal Taxes for Individuals	3
ACCT 3055	Cost Accounting I	4
ACCT 3061	Intermediate Accounting I	4
ACCT 3062	Intermediate Accounting Ii	4
ACCT 3030	Computerized Systems Applied to Accounting	3
BADM 1900	Fundamentals of Business Management	3
FINA 2101	Corporate Finance I	3
MAEC 2211	Principles of Microeconomics	3
MAEC 2221	Basic Statistics	3

Note: Students, in consultation with their academic adviser, will select between ACCT 3041 and ACCT 3085, the course that is more appropriate in agreement with their professional interests and with their field. By way of exception, the AAS in Accounting can offer 3000 level courses.

Accounting (BBA)

Accounting (BBA)

The Bachelor in Business Administration in Accounting aspires to develop professionals in the Accounting field who are successful in the performance of their functions in the private and public sectors.

The Accounting program provides learning experiences through the use of technology and it exhorts students to continue their professional training. The new trends in the way of conducting businesses require ample knowledge in accounting and other areas such as communication skills, use of the technology, economics, and finance, among others.

Students must pass core and major courses with the minimum grade of C.

This Program, in the San Germán Campus, is accredited by the *International Assembly for Collegiate Business Education (IACBE),* located on 11374 Strang Line Road, Lenexa, Kansas, USA.

This Program, in the Bayamón Campus, is accredited by the *Accreditation Council for Business Schools and Programs (ACBSP)* (https://www.acbsp.org/).

All campuses are authorized to offer this Program. The Guayama campus is also authorized to offer this Program through online education.

Program Goals

1. Develop professionals dedicated to the mastery of knowledge and skills related to the exercise of the profession of Accounting at the national and international levels.

2. Foment the use of social, ethical and legal aspects in the process of decision making.

3. Promote the continuous development of the competencies required in this discipline as a core part of their commitment with their personal and professional improvement.

Program Objectives

1. Integrate the knowledge and skills related to the applicable principles, norms and current laws, as well as the technology in diverse scenarios at the national and international levels, into the accounting practice.

2. Apply the social, ethical and legal principles as a basis for the process of decision making.

3. Foment in students the responsibility to maintain a process of continuous learning in order to obtain their personal and professional development and to give relevant answers to the exigencies of their environment.

Competencies Profile of Graduates

This Program is designed to develop the competencies that will enable students to:

Knowledge

Knowledge and understanding of:

1. the accounting theory using as its base the generally accepted principles of financial accounting in the national and international environment.

2. the generally accepted theory and norms for auditing

the financial information of the organization.

3. the state and federal tax legislation applicable to individuals.

4. the theory of managerial accounting and costs for its application in organizations.

5. the theory and the applicable accounting principles in non-profit organizations.

6. the information and communication technology used in accounting processes.

7. the legal responsibility, the ethical principles and the Code of Ethics of the accounting profession.

Skills

1. Apply the theory and the principles of financial accounting to prepare, analyze and report on the economic results and the financial situation of the organization.

2. Apply the theory and the audit norms to emit judgment on the results of the structure of the internal control and the results of an audit of accounts.

3. Apply the provisions of the Code of Internal Revenue of Puerto Rico and the United States (federal) and their amendments to determine the taxes of the individual.

4. Apply the theory of managerial accounting and costs for the accumulation, allocation, communication of results and analysis for decision making.

5. Analyze the accumulation of costs for the purpose of planning, implementing and controlling the operations of the company.

6. Use information and communication technology related to the accounting profession.

Attitudes

1. Value the importance of continuous learning to stay competent in the profession.

2. Demonstrate an ethical conduct in the different scenarios that you are in.

3. Demonstrate interest in participating in professional activities that contribute to your academic and professional development, such as workshops, lectures, seminars, professional contests encounters, internships.

Requirements for the Bachelor of Business Administration Degree in Accounting

General Education Requirements	48 credits
Core Course Requirements	37 credits
Major Requirements	33 credits
Elective Courses	3 credits
Total	121 credits

General Education Requirements - 48 credits

Forty-eight (48) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees." Students in this Program will take GEMA 1200 in the Basic Mathematical Skills category.

Core Course Requirements - 37 credits

ACCT 1161	Introduction to Financial Accounting	4
BADM 1900	Fundamentals of Business Management	3
BADM 3900	Information Systems in Organizations	3
BADM 4300	Managerial Economics	3
FINA 2101	Corporate Finance I	3
MAEC 2140	Fundamentals of Quantitative Methods	3
MAEC 2211	Principles of Microeconomics	3
MAEC 2212	Principles of Macroeconomics	3
MAEC 2221	Basic Statistics	3
MAEC 2222	Managerial Statistics	3
MKTG 1210	Introduction to Marketing	3
OMSY 3030	Business Communication in Spanish Or	3
OMSY 3040	Business Communication in English	3

Major Requirements - 33 credits

ACCT 3041	Puerto Rico Tax System for Individuals	4
ACCT 3055	Cost Accounting I	4
ACCT 3061	Intermediate Accounting I	4
ACCT 3062	Intermediate Accounting Ii	4
ACCT 3063	Intermediate Accounting Iii	4
ACCT 3085	Federal Taxes for Individuals	3
ACCT 3030	Computerized Systems Applied to Accounting	3
ACCT 3460	Accounting for Non Profit Organizations	3
ACCT 4010	Auditing and Ethics for	4

Accountants

Minor in Internal Auditing

Intended for students of the Business Administration programs.

The Aguadilla, Barranquitas and Bayamón campuses are authorized to offer this Minor.

Requirements for the Minor in Internal Auditing - 23 credits

Courses for the Minor in Internal Auditing

ACCT 3061	Intermediate Accounting I	4
ACCT 3062	Intermediate Accounting Ii	4
AUDI 3090	Fundamentals of Internal Auditing	3
AUDI 3092	Internal Auditing Administration	3
AUDI 3193	Information Systems Intervention	3
AUDI 4194	Report Writing in Auditing	3
AUDI 4195	Investigation of Fraud	3

Minor "CPA Track"

Requirements for the Minor in CPA Track - 29 credits

Students who aspire to take the Certified Public Accountant (CPA) examination must have approved 150 credit-hours, as required by the Accounting Examining Board of Puerto Rico.

These students must have approved 29 additional credits with a minimum grade of C in each course.

All campuses are authorized to offer this minor.

Courses for the Minor in CPA Track

Required courses - 14 credits

Students will take the following courses and 15 additional credits in coordination with the academic counselor.

ACCT 3042	Tax System of Puerto Rico For Corporations, Partnerships and Other Entities	3
ACCT 3086	Federal Taxes for Corporations, Partnerships and Other Entities	3
ACCT 3480	Accounting for Business Combinations and Partnerships	4
ACCT 4020	Business Law for CPA	4

Candidates

Additional Courses - 15 credits

These courses will be selected in coordination with the academic counselor.

Note: It is recommended to take courses from the 3000 and 4000 levels.

Minor in Financial Accounting

The Minor in Financial Accounting is designed so that students of any academic program can develop techniques to carry out basic tasks of accounting, within their profession; in addition, it provides other opportunities of employment.

All campuses are authorized to offer this minor.

Requirements for the Minor in Financial Accounting - 19 credits

Courses for the Minor in Financial Accounting

ACCT 1161	Introduction to Financial Accounting	4
ACCT 3041	Puerto Rico Tax System for Individuals	4
ACCT 3061	Intermediate Accounting I	4
ACCT 3062	Intermediate Accounting Ii	4
ACCT 3030	Computerized Systems Applied to Accounting	3

Minor in Taxes

The Minor in taxes is designed for students whose major is not accounting. This Minor will help students in the development of techniques and skills in the area of state and federal taxes.

All campuses are authorized to offer this minor.

Requirements for the Minor in Taxes - 21 credits

Courses for the Minor in Taxes

ACCT 1161	Introduction to Financial Accounting	4
ACCT 1162	Introduction to Managerial Accounting	4
ACCT 3041	Puerto Rico Tax System for Individuals	4
ACCT 3042	Tax System of Puerto Rico For Corporations, Partnerships and Other Entities	3
ACCT 3085	Federal Taxes for Individuals	3

| ACCT 3086 | Federal Taxes for Corporations, Partnerships and Other Entities | 3 |

Agronomy (BAS)

The Bachelor in Agricultural Sciences in Agronomy aspires to train professionals in the agricultural sector, particularly in the areas of crops, animal production and entrepreneurship. The curricular design of this program includes theoretical and practical courses. In addition, elements such as entrepreneurship, research and technology are integrated into the conceptual framework of the curriculum. It is expected that graduates of this program can acquire theoretical and practical knowledge that will allow them to work in the areas of quality control, agricultural production and innovation, and environmental protection.

Program Goals

1. Apply good agricultural practices as an operational management model recommended and regulated by regulatory agencies in the United States and Puerto Rico, as well as internationally.

2. Use strategies to improve the quality of production techniques and the transformation process of food and agricultural products.

3. Scientifically use the tools, techniques and practices necessary for the purpose of improving and transforming agricultural production systems and food processing and marketing.

4. Train professionals to face challenges in food safety, by improving food production, with attention to the conservation of biodiversity and the environment.

5. Promote the social and economic well-being of the country with attention to social, economic and environmental aspects.

6. Develop knowledge in soil and water management, animal production, fruit and crop production, pest and disease management, post-harvest, agro-industry, agrarian economy, among others.

7. Develop professionals trained in leadership, in the detection and development of new business opportunities related to the agricultural industry.

The student must approve the required major courses with a minimum grade of C.

The Guayama Campus is authorized to offer this program in person and online modality.

Competencies Profile of Graduate

The focus of the mission and philosophy of the proposed curriculum frame a vision of the graduate with a theoretical and practical education that enables them to perform successfully both professionally and personally. The educational goal of the Baccalaureate in Agricultural Sciences in Agronomy program is to prepare a graduate with the knowledge, skills and attitudes that enable him to be employed, generate agribusiness and at the same time offer a good service to society. It is intended to form an educated and competent professional, responsible and respectful for himself, his profession and society. The graduate, as a professional in the field of Agricultural Sciences in Agronomy, must be able to manifest the following knowledge, skills and attitudes:

Knowledge

1. Demonstrate knowledge of the principles that govern the functioning and behavior of plants and their implications in agriculture.

2. Apply theoretical and scientific principles for the improvement of food production systems, the detection and solution of agricultural problems.

3. Know the aspects that influence the sowing and development of crops.

4. Demonstrate knowledge about the etiology and diagnosis of diseases in plants and animals.

5. Evaluate the factors responsible for animal and plant health.

6. Apply scientific evidence to identify and solve agricultural problems to improve food production incorporating technological advances.

7. Demonstrate knowledge and skills in the principles of management, related to the planning, organization, administration and control of agribusiness and the ability to strategically apply scientific mathematical tools in solving problems of an economic-business nature.

8. Integrate a vision of risk prevention and elimination of dangers that may cause accidents, affect food safety and / or affect the environment, integrating strategic planning and other managerial and scientific tools in agricultural activity.

9. Demonstrate theoretical and practical knowledge about the preventive maintenance of agricultural machinery, equipment and implements of animal and motor traction, as well as the care of draft animals used in agriculture.

10. Analyze the main components of an agricultural science research and ethical principles.

Skills

1. Develop technical skills for raising, feeding, habitat and caring for animals.

2. Demonstrate ability to identify factors that affect planting and crop development in traditional and soilless systems.

3. Demonstrate ability to use and manage agricultural equipment and implements.

4. Apply techniques of fertilization, planting, pruning, prevention, treatment and control of herbs, pests and diseases.

5. Design facilities for animal housing, drainage and irrigation systems in accordance with the laws, standards and regulations established in Puerto Rico among other countries in the world.

6. Develop the skills to categorize and identify the main groups of plants, their morphological and reproductive characteristics.

7. Apply different strategies to reduce the production of agricultural waste.

8. Develop skills for the establishment and administration of agricultural companies and the marketing of agricultural products.

9. Apply theoretical-practical principles for the conservation and transformation of agricultural products.

10. Apply quantitative and qualitative research methods in the design of research studies in Agricultural Sciences.

Attitudes

1. Take responsibility for their actions, personal and professional growth.

2. Integrate ethical-legal and moral values in the performance of their duties and in the conservation of the environment.

3. Develop group work skills and interpersonal relationships in work environments.

4. Recognize the importance of the integration of technology in the development of agriculture.

5. Demonstrate leadership and self-management skills to apply the scientific method in solving problems and in the decision-making process.

Requirements for the Bachelor of Agricultural Science in Agronomy

General Education Requirements	42 credits
Major Requirements	84 credits
Elective Courses	3 credits
Total	129 credits

General Education Requirements

Forty-two (42) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees." Students are exempt from taking courses from the category Scientific and Technological Context and course GEEC 2000 - Entrepreneurial Culture.

Major Requirements

AGRO 1100	Edaphology	3
AGRO 1120	Phytopathology	3
PHYS 1013	General Physics and its Applications	4
BIOL 1100	Botany And Plant Physiology	3
AGRO 1130	Animal Welfare	3
CHEM 2120	Chemistry Applied to Agricultural Science	3
AGRO 2200	Agricultural Health and Safety	3
AGRO 2211	Crop Production I	4
AGRO 2212	Crop Production II	4
AGRO 2220	New Agricultural Trends	4
AGRO 2225	Food and Animal Nutrition	3
AGRO 2230	Animal Production I	3
AGRO 2231	Animal Production II	3
AGRO 2240	Agricultural Waste	3

AGRO 2250	Agricultural Enterprise	3
AGRO 2910	Practice in Agricultural Technology	2
AGRO 3010	Agricultural Machinery and Mechanization	4
AGRO 3015	Agrobusiness Management	3
AGRO 3020	Agricultural Biotechnology	3
AGRO 3025	Challenges Due to Climate Change	3
AGRO 4010	Soil and Water Conservation	3
AGRO 4015	Pasture and Forage Management	3
AGRO 4020	Project Design and Evaluation	3
AGRO 4025	Agricultural Marketing	3
AGRO 4030	Research in Agricultural Science	3
AGRO 4910	Practice in Agricultural Science	3

Animal Science with Pre Veterinary BS

The Bachelor of Science in Animal Science with Pre-Veterinary program includes the study of animal handling and care and general education courses. In addition, it has a component of courses in the different areas of natural sciences. This allows the student, who pursues post-graduate studies as a Veterinary Doctor, to complete the admission requirements to most Veterinary Schools. The student who does not wish to complete the baccalaureate will have the option of finishing an Associate Degree in Veterinary Technician.

The student must approve the required major courses with a minimum grade of C.

The Guayama Campus is authorized to offer this program.

Competencies Profile of Graduates

Knowledge

1. Demonstrate knowledge in offering veterinary care in areas such as restraint techniques, animal review, imaging and laboratory tests, among other functions under the supervision of the veterinarian.

2. Develop knowledge to assist the doctor in the process of evaluating emergencies and surgical interventions.

3. Know the equipment and technologies related to the treatment and care of the patient.

4. Demonstrate knowledge when offering care to the sick, operated or hospitalized patient.

5. Evaluate patient data correctly.

6. Identify the educational needs of animal owners to provide them with education on their care.

7. Prioritize the study of the contents necessary to take the veterinary college admission test Veterinary College Admission Test (VCAT), the GRE or any other.

Skills

1. Apply the techniques and procedures to assist the veterinarian in the provision of patient care and the treatment of diseases.

2. Demonstrate ability in the use and management of equipment, technological means and clinical procedures.

3. Evaluate the patient's condition and their needs for treatment, lodging, nutrition, dental work, among others.

4. Use effective communication techniques and critical judgment to assist the veterinarian in providing patient care.

5. Apply safety rules and universal protection measures when offering patient care and when handling tissues or other materials of biological origin.

6. Develop the skills of observation, data collection, evaluation, deduction and interpretation of results.

7. Maximize your leadership and work skills in well-structured settings.

Attitudes

1. Achieve the development of critical thinking and problem solving skills.

2. Apply ethical and legal principles in the performance of functions.

3. Demonstrate an attitude of responsibility and commitment as a student and in the practice of their profession.

4. Assess the importance of keeping your knowledge up to date.

Admission Requirements

In addition to the admission requirements established in

this Catalog, students in this Program must:

- Submit evidence of vaccination against the rabies virus on or before the start of the second academic semester.

REQUIREMENTS FOR THE BACHELOR IN SCIENCE IN ANIMAL SCIENCE WITH PRE-VETERINAY

General Education Program Requirements	42 credits
Core Requirements	44 credits
Major Requirements	34 credits
Electives	3 credits
Total	120 credits

General Education Program Requirements - 42 credits

Students must complete forty-two (42) credits of the General Education Program (GEP) requirements, as described in the GEP section of the current catalog. Students in this program are exempt from courses in the categories: Health and Quality of Life and Scientific and Technological Context.

Core Requirements - 44 credits

BIOL 1101	General Biology I	3
BIOL 1102	General Biology II	3
BIOL 1103	Biology Skills Laboratory I	1
BIOL 1104	Biology Skills Laboratory II	1
BIOL 3105	General Microbiology	4
BIOL 2153	Biostatistics	3
CHEM 1111	General Chemistry I	4
CHEM 2212	General Chemistry II	4
CHEM 4220	Biochemistry	4
CHEM 2221	Organic Chemistry I	4
CHEM 2222	Organic Chemistry II	4
MATH 1500	Precalculus	5
PHYS 3001	General Physics I	4

Elective - 3 credits

BIOL 3010	Genetics	3
BIOL 4604	Cellular and Molecular Biology	3

Major Requirements - 34 credits

VETC 1100	Introduction to Veterinary Sciences	2
VETC 1120	Animal Anatomy and	3

	Physiology	
VETC 2200	Farm Animals	3
VETC 2201	Parasitology and Microbiology	3
VETC 2202	Clinical Laboratory	2
VETC 2210	Pharmacology and Toxicology	3
VETC 2213	Laboratory Animals	2
VETC 2220	Veterinary Nursing	3
VETC 2240	Radiology	3
VETC 2250	Anesthesia and Surgery	3
VETC 2255	Common Diseases in Domestic Animals	3
VETC 2910	Veterinary Technician Practice	2
VETC 2970	Seminar	1
VETC 4970	Integration Seminar	1

Agricultural Technology (AAS)

The Associate of Applied Science Degree in Agricultural Technology aspires to train professionals in the agricultural sector. This program is designed for students who are interested in the area of agricultural production and in agro-industries. The graduates of this program will be able to acquire theoretical and practical knowledge that will permit them to work in the quality, production and farming innovation areas, and in preservation of the environment.

The focus of the mission and philosophy of the curriculum frames a vision of graduates with a theoretical and practical education that enables them to develop successfully in a professional and personal manner. The Associate of Applied Science Degree in Agricultural Technology has as its educational goal to develop students with the knowledge, skills and attitudes that will prepare them for employment, to create agricultural businesses, and at the same time to offer good services to the society to which they belong. The purpose is to form well-mannered, competent, responsible and respectful professionals for their own benefit and that of their profession and for society.

The Barranquitas and Guayama campuses are authorized to offer this program.

Competencies Profile of Graduates

The Program is designed to develop the competencies that will enable students to:

Knowledge

Demonstrate knowledge and understanding of:

1. the applicability of the theoretical and scientific principles for the improvement of the systems of food production, and the detection and solution of

agricultural problems.

2. the aspects that influence in the planting and development of crops.

3. the etiology and the diagnosis of diseases in plants and animals.

4. the factors responsible for animal and vegetable health.

5. the scientific evidence applicable to the identification and solution of agricultural problems in order to improve food production by incorporating technological advances.

Skills

1. Develop technical skills for the raising, feeding, the habitat and the care of animals.

2. Demonstrate ability to identify the factors that affect seeding and development of the crops in the systems without soil.

3. Demonstrate ability for the use and handling of the equipment and agricultural implements.

4. Apply techniques for fertilization, seeding, control of grass, pruning, prevention, treatment and control of plagues and diseases.

5. Design facilities for animal lodging, drainage systems and irrigation in agreement with the laws, standards and regulations established in Puerto Rico and among others countries of the world.

6. Develop the skills to categorize and identify the main groups of plants, and their morphologic and reproductive characteristics.

7. Apply different strategies to reduce the production of agricultural waste.

8. Develop ability for the establishment and administration of agricultural businesses.

Attitudes

1. Integrate the ethical-legal and moral values in the performance of their functions and in environmental conservation.

2. Develop skills in team work and interpersonal relations in the work environments.

Requirements for the Associate of Applied Science

Degree in Agricultural Technology

General Education Requirements	24 credits
Major Requirements	36 credits
Total	60 credits

General Education Requirements - 24 credits

Twenty-four (24) credits are required as established in the General Catalog in the section "General Education Requirements for Associate Degrees".

Major Requirements - 36 credits

BIOL 1100	Botany And Plant Physiology	3
AGRO 1100	Edaphology	3
AGRO 1120	Phytopathology	3
AGRO 2200	Agricultural Health and Safety	3
AGRO 2211	Crop Production I	4
AGRO 2212	Crop Production II	4
AGRO 2220	New Agricultural Trends	4
AGRO 2230	Animal Production I	3
AGRO 2240	Agricultural Waste	3
AGRO 2250	Agricultural Enterprise	3
AGRO 2910	Practice in Agricultural Technology	2

Aviation Sciences (BS)

Aviation Sciences (BS)

The Bachelor of Science in Aviation Sciences offers a balance in the areas of aviation science, technology, and aeronautics. Students may choose one of the two majors described below; in addition, they may choose one of the four minors, a minor in Air Traffic Control, a minor in Aviation Management, a minor in Commercial Pilot, or a minor in Airway Dispatcher.

The Program is accredited by the Aviation Accreditation Board International (AABI) (http://www.aabi.aero/).

The Bayamón Campus is authorized to offer this Program.

Competencies Profile of Graduates

This Program is designed to develop the competencies that will enable students to:

Knowledge

1. Make professional and ethical decisions.

2. Assess contemporary issues.

3. Assess the national and international environment of

aviation.

Skills

1. Apply mathematics, science, and applied sciences to aviation-related disciplines.

2. Analyze and interpret data.

3. Work effectively on multi-disciplinary and diverse teams.

4. Communicate effectively, using both written and oral communication skills.

5. Use the techniques, skills, and modern technology necessary for professional practice.

6. Apply pertinent knowledge in identifying and solving problems.

7. Apply knowledge of business sustainability to aviation issues.

Attitudes

1. Engage in and recognize the need for life-long learning.

Descriptions of the Majors

1. Aircraft Systems Management (Professional Pilot)

This major is designed to prepare professional pilots with solid background skills in flight theory, meteorology and safety. The Program covers the requirements established by the Federal Aviation Administration (FAA) for the preparation of students to obtain certificates for Private Pilot, Single-engine and Multi-engine Commercial Pilot, the training for Instrument Rating, and the certifications for initial Flight Instructor, Certified Flight Instructor - Instrument and Multi-engine Flight Instructor.

Students are responsible for requesting the examinations necessary to obtain the aforementioned certificates from the FAA. In addition, they are responsible for complying with the FAA regulations, the procedures stipulated by the Aircraft Operations Manual, and the Flight Operations Manual of the School of Aeronautics, at all times in which they are operating an aircraft of the Institution. Failure to comply with the regulations and procedures constitutes a violation to the stipulated safety norms and could result in the suspension of the student from the program. Students of the Program may be tested for drug and alcohol use, in agreement with the Federal Aviation Regulations (FAR).

2. Aviation Management

This major develops the necessary skills for students to occupy managerial or administrative positions with the air transportation industry.

Admission Requirements for Aircraft Systems Management (Professional Pilot) major

Candidates must:

1. Be high school graduates or the equivalent, with a minimum grade point average of 2.50.

2. Have obtained a minimum score of 475 points in the Mathematics section and a minimum of 490 in the English section of the PAA or equivalent test .

3. Present a First Class Medical Certificate issued by a medical doctor recognized by the Federal Aviation Administration (14 CFR Part 67) in order to take classes with a flight laboratory.

4. Have an interview, in English, with a panel directed by the chief of flight instructors of the Aeronautical School or the person designated by him and be recommended for admission by the Panel.

Admission Requirements for Aviation Management major

Candidates must:

1. Be graduates of high school or its equivalent with a minimum GPA of 2.00.

2. Have obtained a minimum score of 475 in the Mathematics section and 490 in the English section of the PAA or equivalent test.

3. Have an interview, in English, with a panel from the School of Aeronautics and be recommended for admission.

Specific Admission Requisites for transfer students or change of major

Transfer or major change students from other programs of the Inter American University of Puerto Rico or transfers from other universities or institutions of higher education can enter the programs in Aviation Sciences, if they meet the admission requisites of the Inter American University of Puerto Rico, and with those identified below, according to the major:

Aircraft Systems Management (Professional Pilot)

1. Have a grade point average (GPA) of 2.50 or higher.

2. Have approved the Pre-Calculus course (MATH 1500) or equivalent with a minimum grade of C.

3. To have approved the English courses at the intermediate level (GEEN 1201 and 1202) or English at the advanced level (GEEN 2311 and 2312) or equivalents with a minimum grade of B.

Aviation Management

1. Have a grade point average (GPA) of 2.00 or higher.

2. Have approved the Pre-Calculus course (MATH 1500) or equivalent with a minimum grade of C.

3. To have approved the English courses at the intermediate level (GEEN 1201 and 1202) or English at the advanced level (GEEN 2311 and 2312) or equivalents with a minimum grade of B.

Graduation Requirements

In addition to fulfilling the general requirements for graduation, students in Aviation Sciences must:

1. Complete all the academic requirements of the selected program.

2. Achieve a minimum grade point average of 2.50 in the major and core courses.

3. Have approved the intermediate or advanced level English courses with a minimum grade of B.

4. In addition to the graduation requirements listed below, for the Major in Aircraft Systems Management, students are required to have obtained certificates issued by the FAA. The certificates are:

   • Private Pilot

   • Instrument Rating

   • Commercial Pilot with Single-engine and Multi-engine Rating

   • Certified Flight Instructor (CFI)

   • Certified Flight Instructor-Instrument (CFII)

   • Certified Flight Instructor-Multi-Engine (MEI)

NOTE: *The students in this program will take theory and flight courses using the resources provided by the*

University. These resources include the services that, due to their nature, may be subcontracted.

Requirements for the Bachelor of Science Degree in Aviation Sciences

General Education Requirements	42 credits
Core Course Requirements	46 credits
Major Requirements	37 credits
Total	125 credits

General Education Requirements - 42 credits

Forty-two (42) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees." Students of this Program will take the course GEMA 1200 in the Basic Skills in Mathematics category. Students who have obtained a score equal to or higher than 520 in the mathematics section on the PAA test are exempted from GEMA 1200 and will take three credits in any Aeronautics (AWSC) course that are not core requisites nor from the highest major that the student has declared. In the Philosophical and Aesthetic category, they will take only three (3) credits in the course GEPE 4040. In the Historical and Social Context category students will only take two courses, one of which will be GEHS 2010.

Students will take the following courses in Spanish and English:

Basic Skills in English (Choose 9 credits)

GEP-GEEN 1201	English Communication I	3
GEP-GEEN 1202	English Communication II	3
GEP-GEEN 1203	English Communication III	3
GEP-GEEN 2311	Reading and Writing	3
GEP-GEEN 2312	Literature and Writing	3
GEP-GEEN 2313	Research and Writing	3

Basic Skills in Spanish for native speakers (9 credits)

GEP-GESP 1101	Literature and Communication: Narrative and Poetry	3
GEP-GESP 1102	Literature and Communication: Essay and Theatre	3
GEP-GESP 2203	Literature and World View	3

Basic Skills in Spanish for non-native speakers (9 credits)

GEP-GESP 1021	Basic Spanish as a Foreign Language	3
GEP-GESP 1022	Intermediate Spanish as a Foreign Language	3
GEP-GESP 2023	Advanced Spanish as a Foreign Language	3

Core Course Requirements - 46 credits

AWSC 2000	Introduction to Aeronautics and Space	3
AWSC 2130	English Proficiency for Aviation Professionals	3
AWSC 3300	Aviation Law	3
AWSC 3600	Aviation Safety and Security	3
AWSC 4000	Airport Development and Operations	3
AWSC 4100	Career Development for Aerospace Professionals	1
AWSC 4310	Human Factors in Aviation	3
BADM 1900	Fundamentals of Business Management	3
ENGL 2075	Technical Literature	3
MAEC 2211	Principles of Microeconomics	3
MAEC 2212	Principles of Macroeconomics	3
MAEC 2221	Basic Statistics	3
MATH 1500	Precalculus	5
PHYS 3500	Physics for Aviators	4
PSYC 1051	General Psychology I	3

Major Requirements

Major Requirements for Aircraft Systems Management (Professional Pilot) - 37 credits

Courses for the major Aircraft Systems Management (Professional Pilot)

AWSC 2115	Private Pilot Theory	5
AWSC 2116	Private Pilot Flight Laboratory	1
AWSC 3155	Instrument Rating	4
AWSC 3160	Commercial Pilot	3
AWSC 3411	Principles of Air Traffic Control	3
AWSC 4204	Airline Operations	3
AWSC 4305	Aviation Meteorology	3
AWSC 4320	Advanced Aircraft Systems	3
AWSC 4340	Applied Aerodynamics	3
AWSC 4370	Flight Instructor	4
AWSC 4394	Training Techniques for Flight Crew (CRM Training)	3
AWSC 4364	Flight Instructor-Instruments	1
AWSC 4373	Multi-Engine Instructor	1

Major Requirements for Aviation Management - 37 credits

Courses for the major Aviation Management

AWSC 2020	Aviation Fundamentals	3
AWSC 4600	Airline Management	3
AWSC 4680	Aviation Strategic Management	3
ACCT 1161	Introduction to Financial Accounting	4
HRMA 2100	Human Resource Administration	3
BADM 3900	Information Systems in Organizations	3
BADM 4300	Managerial Economics	3
OPMS 3000	Operations Management of Manufacturing and Service	3
FINA 2101	Corporate Finance I	3

Select nine (9) credits from the following:

AWSC 2300	Airline Passenger Services	3
AWSC 3411	Principles of Air Traffic Control	3
AWSC 4055	Management of Air Cargo	3
AWSC 4305	Aviation Meteorology	3
AWSC 4650	Fundamentals of Airline Finance	3
AWSC 4660	Fixed Based Operators Management	3
AWSC 4670	International Commerce and Aviation	3
AWSC 4913	Practicum in Air Agencies Operations	3

Minor in Air Traffic Control

The minor in air traffic control is offered to all students who are interested and who meet the established requirements. This program offers to the student the initial training for air traffic controller. Once students complete a bachelor's degree and the requirements of this minor, they can request admission to the Academy of the Federal Aviation Administration in the city of Oklahoma. The admission to the minor in air traffic control is limited. The students are selected by means of an interview process where their capability to perform as an air traffic controller is evaluated.

Students interested in being admitted to the minor in air traffic control must meet the following requirements:

1. Be registered in studies leading to a bachelor's degree in Inter American University of Puerto Rico.

2. Have a minimum academic index of 2.8.

3. Have a mastery of the English language both orally and in writing.

4. Complete an interview with the panel of evaluation of the minor of air traffic control.

5. Be under 30 years of age when completing the specialization requirements and meet the job requirements of the FAA.

The Bayamón Campus is authorized to offer this minor.

Requirements for the Minor in Air Traffic Control - 27 credits

Courses for the Minor in Air Traffic Control

AWSC 2000	Introduction to Aeronautics and Space	3
AWSC 2020	Aviation Fundamentals	3
AWSC 2130	English Proficiency for Aviation Professionals	3
AWSC 4305	Aviation Meteorology	3
AWSC 4310	Human Factors in Aviation	3
AWSC 4515	Air Traffic Control I: Tower Operation	4
AWSC 4516	Air Traffic Control II: Radar Operation	4
AWSC 4517	Air Traffic Control III: In-Route and In Terminals	4

Minor in Airway Dispatcher

The Bayamón Campus is authorized to offer this Minor.

Requirements for the Minor in Airway Dispatcher - 27 credits

Courses for the Minor in Airway Dispatcher

AWSC 2000	Introduction to Aeronautics and Space	3
AWSC 2020	Aviation Fundamentals	3
AWSC 2130	English Proficiency for Aviation Professionals	3
AWSC 3411	Principles of Air Traffic Control	3
AWSC 3600	Aviation Safety and Security	3
AWSC 4305	Aviation Meteorology	3
AWSC 4310	Human Factors in Aviation	3
AWSC 4510	Airway Dispatcher I	3
AWSC 4520	Airway Dispatcher II	3

Minor in Aviation Management

Intended for students in Business Administration Programs (B.B.A.) who meet the requirements corresponding to the following minor. Students of other programs may take this minor, but they must take the following courses as prerequisites: GEMA 1200, BADM 1900, BADM 4300, MAEC 2211, MAEC 2212 and MAEC 2221.

The Bayamón Campus is authorized to offer this minor.

Requirements for the Minor in Aviation Management - 24 credits

Courses for the Minor in Aviation Management

AWSC 2000	Introduction to Aeronautics and Space	3
AWSC 3300	Aviation Law	3
AWSC 3600	Aviation Safety and Security	3
AWSC 4000	Airport Development and Operations	3
AWSC 4055	Management of Air Cargo	3
AWSC 4600	Airline Management	3
AWSC 4680	Aviation Strategic Management	3
OPMS 3000	Operations Management of Manufacturing and Service	3

Minor in Commercial Pilot

All students registered in any academic program at Inter American University of Puerto Rico may take this Minor as long as they present evidence of the first class medical certificate issued by a medical doctor recognized by the Federal Administration of Aviation, FAR Part 67) and pass an interview with the Head Instructor.

In addition, to declare this concentration, the student must have approved the intermediate English course GEEN 1201 or advanced English course GEEN 2311 or its equivalent with a grade greater than or equal to B.

The Bayamón Campus is authorized to offer this Minor.

Requirements for the Minor in Commercial Pilot - 18 credits

Courses for the Minor in Commercial Pilot

AWSC 2000	Introduction to Aeronautics and Space	3
AWSC 2115	Private Pilot Theory	5
AWSC 2116	Private Pilot Flight Laboratory	1
AWSC 3155	Instrument Rating	4

| AWSC 3160 | Commercial Pilot | 3 |
| AWSC 3411 | Principles of Air Traffic Control | 3 |

Applications Development (BS)

Applications Development (BS)

The Bachelor of Science in Applications Development offers theoretical and practical training aimed at developing professionals focused on technical areas with knowledge of business data management. It also fosters skills in application development, analytical problem solving, database management, computer networks and their security, and the use of tools to manage company information. The Program provides general knowledge of business organizations and promotes the development of skills that will enable the student to launch his own business or contribute to the success of his employer's business.

The Bayamón Campus is authorized to offer this program.

Program Objectives

1. Develop applications for computer information technologies.

2. Use tools for effective business data management.

3. Understand the basic concepts of computer networks.

4. Master the development cycle of an application.

5. Analyze, design and manage relational databases.

6. Understand the basic process for starting a business.

7. Demonstrate teamwork skills.

8. Develop effective communication skills for a variety of audiences.

9. Provide the student with an environment that integrates knowledge, skills, attitudes, values, and social and ethical aspects of the discipline.

Competencies Profile of Graduates

This program is designed to develop the competencies that will allow students to:

Knowledge

Demonstrate knowledge and understanding of:

1. cross platform application development tools for desktops, Internet and mobile devices.

2. the basic concepts of computer networks.

3. the concepts of ethics and social responsibility of the discipline.

4. database reporting tools.

5. the basic concepts of computer security.

6. the basic process for starting a business.

Skills

1. Develop cross platform application tools for desktop, Internet and mobile devices.

2. Analyze and design databases.

3. Demonstrate mastery of the tools for the management and reporting of electronic data.

4. Implement security concepts in the development of applications.

Attitudes

1. Appreciate the ethical values that prevail in the development of applications.

2. Acknowledge the importance of technology in society and in the country's economy.

3. Acknowledge the importance of clients in an information system.

Requirements of the Bachelor of Science in Applications Development

General Education Requirements	45 credits
Major Requirements	19 credits
Related Requirements	53 credits
Elective Courses	3 credits
Total	120 credits

General Education Requirements - 45 credits

Forty-five (45) credits are required as explained in the General Education Requirements for Bachelor's Degree section. Students in this program are exempt from taking the course from the category of Information and Computing (GEIC 1010). Students enrolled in this program will take GEMA 1200 of the Basic Skills Math category.

Major Requirements - 19 credits

ADEV 2500	Introduction to Cloud Network Management	3
ADEV 3070	Information Systems Project Management	3
ADEV 3500	Decision Support System	3
ADEV 3850	Customer Relationship Software (CRM) Administration	3
ADEV 397_	Special Topics	3
ADEV 4504	Capstone Project	4

Related Requirements - 53 credits

ACCT 1161	Introduction to Financial Accounting	4
ACCT 1162	Introduction to Managerial Accounting	4
MAEC 2140	Fundamentals of Quantitative Methods	3
MAEC 2221	Basic Statistics	3
ENTR 2200	Foundations of Entrepreneurship	3
COMP 2025	Development of Webpages	3
COMP 2120	Programming Logic	3
COMP 2315	Structured Programming	3
COMP 2400	Object Oriented Programming	3
COMP 2501	Discrete Computational Structures I	3
COMP 2800	Databases	3
COMP 2900	Data Structures	3
COMP 3400	Software Engineering	3
COMP 3015	Web Programming with Databases	3
COMP 2850	Movable Computation	3
COMP 4210	Computing in The Cloud	3
COMP 4410	Computational Security	3

Minor in Application Development

This minor is for students of Computer Science, Network Technology, Information Technology, Computer Engineering, Computer Forensics and Business Administration.

The Bayamón Campus is authorized to offer this minor.

Requirements for the Minor in Application Development - 24 credits

Courses for the Minor in Application Development

ADEV 2500	Introduction to Cloud Network Management	3
ADEV 3070	Information Systems Project Management	3

ADEV 3500	Decision Support System	3
ADEV 3850	Customer Relationship Software (CRM) Administration	3
ADEV 397_	Special Topics	3
COMP 2120	Programming Logic	3
COMP 2800	Databases	3
ENTR 2200	Foundations of Entrepreneurship	3

Applied Chemistry (BS)

Applied Chemistry (BS)

The Bachelor of Science in Applied Chemistry presents an interdisciplinary curriculum that aspires to develop in the student the fundamental skills for the application of the principles and theories of chemistry in industry and research laboratories. Prepares the student in the areas of applied chemistry and research.

Every student must take the credits required in one of the submajors: Forensic Chemistry, Nanotechnology or Biochemistry. Submajors allow to expand the areas of research and application, according to the student's field of interest.

The Ponce Campus is authorized to offer this program.

Program Goals

1. Provide technical and scientific knowledge for the development of analytical skills and critical thinking.

2. Promote research and its application in the areas of forensic chemistry, nanotechnology or biochemistry.

3. Develop an ethical attitude in the exercise of their profession.

Program Objectives

1. Know the theoretical and practical foundations of applied chemistry.

2. Use scientific research in the development of critical and analytical thinking.

3. Display ethical values and commitment to the environment through the development of activities.

Competencies Profile of Graduates

The Program is designed to develop the skills that allow the student:

Knowledge

1. Know the theoretical and practical foundations in pure and applied sciences.

2. Understand instrumental methodologies and their importance in chemical transformations and processes.

3. Identify trends and characteristics of chemical systems in the laboratory, industry and the environment.

Skills

1. Analyze substances through physicochemical, biological and instrumental methods to determine their structure and composition.

2. Apply the scientific method to solve problems in the areas of chemistry and study submajors.

3. Write and submit scientific reports.

Attitudes

1. Demonstrate responsibility and commitment to the development of the profession.

2. Value teamwork and ethical principles that apply to discipline and research.

Admission Requirement

1. Have a minimum high school general grade index of 2.50 or equivalent.

Graduation Requirement

The student of the Bachelor of Science degree in Applied Chemistry must pass the core and major courses with a minimum grade of C.

Requirements for the Bachelor Degree in Sciences in Applied Chemistry

General Education Requirements	45 credits
Core Requirements	42 credits
Major Requirements	37 credits
Submajor Requirements	12-14 credits
Elective Courses	3 credits
Total	139 - 141 credits

General Education Requirements - 45 credits

Forty-five (45) credits are required as explained in the General Education Requirements of the Undergraduate programs section. Students are exempted from taking courses in the category of Scientific and Technological Context. In the Historical and Social Context category, only two courses will be taken, one of which will be the GEHS 2010 course. Students who have obtained a score equal to or greater than 520 in the area of Mathematical achievement in the PAA test of the College Board will be exempted from taking the GEMA 1200 course and would take MATH 1511.

Core Requirements - 42 credits

CHEM 1111	General Chemistry I	4
CHEM 2212	General Chemistry II	4
BIOL 1101	General Biology I	3
BIOL 1102	General Biology II	3
BIOL 1103	Biology Skills Laboratory I	1
BIOL 1104	Biology Skills Laboratory II	1
MATH 1511	Precalculus I	3
MATH 1512	Precalculus II	3
MATH 2251	Calculus I	5
MATH 2252	Calculus II	4
MATH 3250	Calculus III	3
PHYS 3001	General Physics I	4
PHYS 3002	General Physics II	4

Major Requirements - 37 credits

CHEM 1000	Fundamentals of Applied Chemistry	3
CHEM 2221	Organic Chemistry I	4
CHEM 2222	Organic Chemistry II	4
CHEM 3320	Analytical Chemistry	4
CHEM 3910	Physical Chemistry: Thermodynamics	4
CHEM 3920	Physical Chemistry: Quantum and Kinetic	4
CHEM 397_	Special Topics	3
CHEM 4000	Instrumental Analysis	4
CHEM 4220	Biochemistry	4

CHEM 4200	Advanced Inorganic Chemistry	3

Submajors Requirements 12-14 credits

Requirements for the Submajor in Biochemistry

Courses for the Submajor in Biochemistry

BIOL 3010	Genetics	3
BIOL 4604	Cellular and Molecular Biology	3
CHEM 4221	Biochemistry II	3
CHEM 4300	Research Methods in Biochemistry	3

Requirements for the Submajor in Forensic Chemistry

Courses for the Submajor in Forensic Chemistry

CHEM 4230	Forensic Chemistry	3
FORS 4421	Forensic Investigation I	3
FORS 4422	Forensic Investigation II	4
FORS 4400	Forensic Toxicology	4

Requirements for the Submajor in Nanotechnology

Courses for the Submajor in Nanotechnology

NANO 3000	Chemistry of Nanomaterials	3
NANO 3100	Nanomedicine	3
NANO 3110	Nanotoxicology	3
NANO 3120	Research Methods in Nanotechnology	3

Minor in Biochemistry

The Minor in Biochemistry presents an interdisciplinary curriculum that aspires to develop in the student the fundamental skills for the application of the principles and theories of chemistry in industry, research laboratories and graduate schools. Prepares the student in the areas of applied chemistry with an emphasis on biochemistry. The minor concentration is aimed at students enrolled in the Bachelor programs in Biology, Forensic Sciences, Biomedical and Microbiology.

The Ponce Campus is authorized to offer this lower concentration.

Requirements for the Minor in Biochemistry - 22 credits

Courses for the Minor in Biochemistry

CHEM 2221	Organic Chemistry I	4
CHEM 2222	Organic Chemistry II	4
CHEM 3320	Analytical Chemistry	4
CHEM 4220	Biochemistry	4
CHEM 4221	Biochemistry II	3

CHEM 4300	Research Methods in Biochemistry	3

Minor in Forensic Chemistry

The Minor in Forensic Chemistry presents an interdisciplinary curriculum that aspires to develop in the student the fundamental skills for the application of the principles and theories of chemistry in industry, research laboratories and graduate schools. This minor concentration is for students enrolled in the Bachelor programs in Biology, Forensic Sciences, Biomedical, and Microbiology.

The Ponce Campus is authorized to offer this lower concentration.

Requirements for the Minor in Forensic Chemistry - 23 credits

Courses for the Minor in Forensic Chemistry

CHEM 2221	Organic Chemistry I	4
CHEM 2222	Organic Chemistry II	4
CHEM 3320	Analytical Chemistry	4
CHEM 4000	Instrumental Analysis	4
CHEM 4220	Biochemistry	4
CHEM 4230	Forensic Chemistry	3

Minor in Nanotechnology

The Minor in Nanotechnology presents an interdisciplinary curriculum that aspires to develop in the student the fundamental skills for the application of the principles and theories of chemistry in industry, research laboratories and graduate schools.

The Ponce Campus is authorized to offer this lower concentration.

Requirements for the Minor in Nanotechnology - 25 credits

Courses for the Minor in Nanotechnology

CHEM 2221	Organic Chemistry I	4
CHEM 2222	Organic Chemistry II	4
CHEM 3320	Analytical Chemistry	4
CHEM 4220	Biochemistry	4
NANO 3000	Chemistry of Nanomaterials	3
NANO 3120	Research Methods in Nanotechnology	3

Audio Production and Postproduction (AAS)

The associate degree in Applied Sciences in Audio Production and Postproduction is designed to provide a theoretical-practical preparation in the field of sound. The graduate can perform as a professional in the areas of music production, sound production in and out of studio, programming and music for video, as well as in others in which he must master techniques related to advanced sound production.

The Bayamon Campus is authorized to offer this Program.

Program Goals

1. To train a sound technician who dominates the field of sound production and postproduction with a high ethical sense.

2. Develop a professional with basic knowledge that allows him/her to consider establishing his/her own business in the field of sound.

Competencies Profile of Graduates

The Program is designed to develop the competences that allow the student to:

Knowledge

1. Know the fundamentals and skills of the exercise of sound production and postproduction.

2. Demonstrate knowledge about the legal, ethical and moral aspects that govern the field of music production.

3. Demonstrate knowledge of the equipment and the computer programs used in the field of sound production and post-production.

Skills

1. Use oral and written English and Spanish correctly.

2. Use vocabulary essential to the discipline of sound production and postproduction.

3. Integrate and apply the principles and theoretical foundations of theory and practice in the field of sound production and postproduction to real situations in the world of work.

4. Install and operate equipment related to the field of sound.

5. Use specialized computer programs that are used in the field of sound.

Attitudes

1. Value the decision-making process in the work scenario.

2. Recognize the need to keep updated on the latest technological advances in the field of sound.

3. Recognize opportunities for self-employment in the industry of sound production and post-production.

Requirements for the Associate Degree in Applied Sciences in Sound Production and Post Production

General Education Requirements	24 credits
Major Requirements	36 credits
Total	60 credits

General Education Requirements - 24 credits

Twenty-four (24) credits are required for the associate degree as explained in the Catalog. Students in this Program will take GEMA 1200 in the Basic Mathematics Skills category.

Major Requirements - 36 credits

COMU 1051	Sound Production Techniques	3
COMU 1070	Voice and Diction	3
COMU 1075	Fundamentals of Music	3
COMU 1080	Introduction to Multichannel Recordings	3
COMU 2226	Techniques for Recording of Sound	3
COMU 2228	Mixture and Postproduction of Sound	3
COMU 2230	Live Sound in And Outside the Studio	3
COMU 2345	Advanced Sound Production	3
COMU 2350	Programming and Musical Arrangements for Videos Seminar	3
COMU 2380	Legal and Ethical Aspects in the Music Industry	3
COMU 2980	Portfolio / Final Project	3
ENTR 2200	Foundations of Entrepreneurship	3

Academic Performance Requirements:

Students enrolled in the Associate Degree in Applied Sciences in Sound Production and Postproduction must pass their major courses with a minimum of C.

Biology (BS)

Biology (BS)

The Program of the Bachelor of Science Degree in Biology aspires to prepare professionals able to understand the biological processes, with a multidisciplinary approach. It provides the experiences that will help them to identify, analyze and solve problems of a biological nature being by using the scientific method. It causes the development of knowledge, laboratory skills and attitudes to exercise the profession with ethical, critical and creative responsibility. It prepares them to face work scenarios or to continue graduate studies.

The Bachelor of Science Degree in Biology has the following goals and objectives.

All campuses are authorized to offer this Program. In addition, the Fajardo Campus is authorized to offer this program through online education.

Program Goals

1. To develop professionals in the field of Biology centered in the mastery of the knowledge of the discipline by means of a multidisciplinary and integrating approach, framed in a scientific and humanistic culture.

2. To promote scientific research, the management of information and the use of technology as a means of producing and development knowledge in the field of Biology.

3. To promote the solution of problems related to the field of the Biology framed in ethical and social responsibility.

4. To foment continuing education as a means to maintain the professional competencies in the field of Biology in the different academic and labor scenes updated.

Program Objectives

1. To apply the knowledge of the discipline by means of a multidisciplinary and integrating approach in different contexts related to the field of Biology.

2. To use scientific research, management of information and the use of the technology as a means of developing knowledge in the field of Biology.

3. To use the scientific method in a critical and creative

way in the solution of problems related to the field of Biology, with ethical and social responsibility.

4. To recognize the importance of continuing education as means for development and professional performance in the field of Biology.

In order to fulfill the graduation requirements for the Bachelor of Sciences in Biology, students must obtain a minimum grade of C in the Biology courses (BIOL) that are part of the Major Requirements and the Prescribed Distributive Requirements.

Competencies Profile of Graduates

The Program is designed to develop the competencies that will enable students to:

Knowledge

To demonstrate knowledge and understanding of:

1. concepts of molecular, cellular and organismal biology and the metabolic processes to maintain homeostasis.

2. concepts of classic, molecular and population genetics integrated to the evolutionary processes and biodiversity.

3. phylogenetical, taxonomical, anatomical and physiological principles of the main plant, animal and microorganism groups and their interaction in the ecosystems.

Skills

1. Apply the scientific method and the use of technology to design and to perform experiments using laboratory equipment and the suitable techniques in a critical and creative way.

2. Communicate in an oral and written form the results of laboratory experiences or research using the scientific format.

Attitudes

1. Demonstrate esteem for the scientific culture and its ethical and social implications in the solution of problems and decision making related to the conservation of natural and environmental resources.

2. Show the importance of staying updated in the knowledge related to the discipline of Biology.

Requirements for the Bachelor of Science Degree in

Biology

General Education Requirements	42 credits	
Major Requirements	36 credits	
Related Requirements	29-30 credits	
Prescribed Distributive Requirements	12 credits	
Elective Courses	3 credits	
Total	122-123 credits	

General Education Requirements - 42 credits

Forty-two (42) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees." Students are exempt from taking courses from the category Scientific and Technological Context and course GEHP 3000 - Integral Health and Quality of Life of the category of Health and Quality of Life. The students of this Program will take GEMA 1200 in the category Basic Skills in Mathematics.

Major Requirements - 36 credits

BIOL 1101	General Biology I	3
BIOL 1102	General Biology II	3
BIOL 1103	Biology Skills Laboratory I	1
BIOL 1104	Biology Skills Laboratory II	1
BIOL 2103	Zoology	3
BIOL 2104	Botany	3
BIOL 2153	Biostatistics	3
BIOL 3105	General Microbiology	4
BIOL 3106	Human Anatomy and Physiology	4
BIOL 3010	Genetics	3
BIOL 3503	Ecology	3
BIOL 4604	Cellular and Molecular Biology	3
BIOL 4605	Cellular and Molecular Biology Skills Laboratory	2

Related Requirements - 29 or 30 credits

CHEM 1111	General Chemistry I	4
CHEM 2212	General Chemistry II	4
CHEM 2221	Organic Chemistry I	4
CHEM 2222	Organic Chemistry II	4
MATH 1500	Precalculus	5
	Or	
MATH 1511	Precalculus I	3
	And	
MATH 1512	Precalculus II	3
PHYS 3001	General Physics I	4
PHYS 3002	General Physics II	4

Prescribed Distributive Requirements - 12 credits

Students will select 12 credits from the following courses:

BIOL 2800	Astrobiology	3
BIOL 3100	Foundations of Animal Science	3
BIOL 3200	Foundations of Animal Nutrition	3
BIOL 3213	Parasitology	3
BIOL 3214	Entomology	3
BIOL 3216	Animal Behavior	3
BIOL 3219	Biology of Invertebrates	3
BIOL 3220	Biochemistry	3
BIOL 3309	Food Microbiology	3
BIOL 3405	Immunology	3
BIOL 3504	Environmental Health	3
BIOL 3505	Environmental Laws, Policies and Regulations	3
BIOL 3601	Comparative Anatomy and Physiology I	3
BIOL 3602	Comparative Anatomy and Physiology Ii	3
BIOL 3904	Toxicology	3
BIOL 4105	Fundamentals of Geographic Information Systems (GIS)	3
BIOL 4109	General Physiology	3
BIOL 4303	Mycology	3
BIOL 4304	Medical Mycology	3
BIOL 4305	Medical Microbiology	3
BIOL 4306	Virology	3
BIOL 4307	Microtechniques	2
BIOL 4403	Evolution	3
BIOL 4405	Embryology	3
BIOL 4407	Human Anatomy	3
BIOL 4433	Industrial Microbiology	3
BIOL 4494	Pharmacology	3
BIOL 4503	Conservation and Management Of Natural Resources	3
BIOL 4600	Histology	3
BIOL 4905	Introduction to Pathology	3
BIOL 4909	Public Health	3
BIOL 4912	Practicum in Biology	3
BIOL 4953	Research Methods	3
BIOL 4955	Integration Seminar	1
BIOL 4960	Bioethics	3
CHEM 3320	Analytical Chemistry	4
CHEM 4220	Biochemistry	4
MASC 3600	Marine Biology	3
MASC 3603	Marine Biology Laboratory	1
MASC 3620	Ichthyology	3
MASC 4030	Coral Reef Ecology	3
MASC 4040	Biology of Marine Mammals, Birds and Turtles	3

MATH 2251	Calculus I	5

Minor in Biology

This minor is aimed at students of the bachelor's degrees in Biotechnology, Environmental Sciences and Forensic Science.

The Aguadilla, Arecibo, Barranquitas, Bayamón, Fajardo, Guayama, Metro, Ponce and San Germán are authorized to offer this minor.

Requirements for the Minor in Biology - 19 credits

Courses for the Minor in Biology

BIOL 2103	Zoology	3
BIOL 2104	Botany	3
BIOL 3106	Human Anatomy and Physiology	4
BIOL 3503	Ecology	3

Select two (2) courses from the following:

BIOL 3504	Environmental Health	3
BIOL 4303	Mycology	3
BIOL 4304	Medical Mycology	3
BIOL 4306	Virology	3
BIOL 4405	Embryology	3
BIOL 4494	Pharmacology	3
BIOL 4503	Conservation and Management Of Natural Resources	3
BIOL 4905	Introduction to Pathology	3

Minor in Biology for Chemistry Students

Requirements for the Minor in Biology for Chemistry Students - 22 credits

The Minor in Biology for Chemistry Students is designed for students from the BS in Chemistry. This will allow students to have experiences in other areas of the natural sciences.

The San Germán Campus is authorized to offer this Minor.

Course for the Minor in Biology for Chemistry Students

BIOL 1101	General Biology I	3
BIOL 1102	General Biology II	3
BIOL 1103	Biology Skills Laboratory I	1
BIOL 1104	Biology Skills Laboratory II	1
BIOL 2153	Biostatistics	3
BIOL 3010	Genetics	3
BIOL 3105	General Microbiology	4

BIOL 3106	Human Anatomy and Physiology	4

Minor in Biology for Non-Scientific Majors

The Minor in Biology for Non-Science Majors is designed for students who are not from natural science programs. This will allow them to have experiences in other areas of knowledge.

The San German Campus is authorized to offer this program.

Requirements for the Minor in Biology for Non-Scientific Majors - 27 credits

Courses for the Minor in Biology for Non-Scientific Majors

BIOL 1101	General Biology I	3
BIOL 1102	General Biology II	3
BIOL 1103	Biology Skills Laboratory I	1
BIOL 1104	Biology Skills Laboratory II	1
BIOL 3010	Genetics	3
BIOL 3105	General Microbiology	4
BIOL 3106	Human Anatomy and Physiology	4
GEP-GEMA 1200	Fundamentals of Algebra	3
CHEM 1111	General Chemistry I	4

Minor in Pre-Medical

The Aguadilla, Arecibo, Barranquitas, Bayamón, and San Germán campuses are authorized to offer this minor. It is aimed for students of the Natural Sciences programs that meet the prerequisites of the following courses.

Requirements for the Minor in Pre-Medical - 25-26 credits

Courses for the Minor in Pre-Medical

BIOL 1102	General Biology II	3
BIOL 1104	Biology Skills Laboratory II	1
BIOL 3220	Biochemistry Or	3
CHEM 4220	Biochemistry	4
GESP or SPAN	Spanish - Select 3 credits from the GESP or SPAN categories	3
GEEN or ENGL	English - Select 3 credits from the GEEN or ENGL categories	3

*Students must complete 3 additional credits in a general Spanish course and 3 additional credits in a general English course, in addition to the 9 credits of the GEP in each area, for a total of 12 credits in Spanish and 12 credits in English. The courses to be taken will be chosen in consultation with the academic adviser or the department director.

**Twelve (12) credits distributed in courses of Sciences of the Conduct and Social Sciences are required (Sociology, Psychology, Political Sciences, Economics, Ethics and Anthropology).

***The majority of the medical schools do not accept introductory courses in these areas. The student must check with the Medicine School to which he is applying, before selecting the courses.

Students of this minor concentration in Barranquitas will be able to take the BIOL 2013 Skills Laboratory II, instead of the BIOL 1104 Laboratory.

Minor in Pre-Veterinary (BS Biology)

This minor in Pre Veterinary provides the most relevant courses and the admission requirements of most veterinary schools in the United States, Canada and the Lesser Antilles. This minor is aimed for students of the Natural Sciences programs.

The Bayamón Campus is authorized to offer this Minor.

Requirements for Minor in Pre-Veterinary - 25 credits

Courses for the Minor in Pre-Veterinary

BIOL 3100	Foundations of Animal Science	3
BIOL 3200	Foundations of Animal Nutrition	3
BIOL 3601	Comparative Anatomy and Physiology I	3
BIOL 3602	Comparative Anatomy and Physiology Ii	3
CHEM 4220	Biochemistry	4
ENGL 3310	Public Speaking	3

Select 6 credits of composition and technical writing in English from the following courses:

ENGL 2075	Technical Literature	3
ENGL 2076	Reading and Writing of Technical Texts	3
ENGL 3007	Advanced Writing	3
ENGL 3025	Writing of Professional Documents	3
ENGL 3030	Technical-Scientific Writing	3

in Sciences

The vast majority of veterinary schools require applicants to have a calculus course in their credit's transcription. We recommend interested students to take the course MATH 2250 (Calculus for Biology and Environmental Sciences, 3 credits) or MATH 2251 (Calculus I, 5 credits) as part of the prescribed distributives of their Bachelor in Biology. However, it is necessary that the student corroborates with each veterinary school to ensure that all specific application requirements are met for each particular school.

Most veterinary schools require excellent grades in high school courses, high scores on entrance exams (GRE) and work experience in veterinary clinics: (1) pet clinic (dogs and cats), (2) farm veterinary, and (3) exotic animals, zoo, or aquarium veterinary. We recommend that the pre veterinary student seek and participate in opportunities, volunteering or internships that provide this type of experience.

Biomedical Sciences (BS)

The Bachelor of Science Program in Biomedical Sciences is designed to develop students' understanding of modern concepts of Biomedical Sciences to familiarize them with the development of basic laboratory skills, teach them to solve scientific problems that will enable them to solve problems in our society, and face the demand for employment or postgraduate studies. It will enable them to take entrance examinations to biomedical sciences schools at the professional or graduated level, to use critical thinking to evaluate consequences and to discern between actions that promote maintenance of quality of life by means of individual and collective health care, and make informed decisions on health issues within a framework of ethical-moral values. The Program is directed to people interested in continuing graduate and professional studies in areas such as Biomedical Sciences, Medicine, Dentistry, Optometry, Public Health and allied Health Sciences. In addition, students can work in the pharmaceutical industry.

Students of this Program must pass all Biomedical Sciences courses and the course MATH 1500 with a minimum grade of C.

The Metropolitan and Ponce campuses are authorized to offer this Program.

Admission Requirements

In addition to the admission requirements established in this Catalog, candidates desiring to enter this Program must:

1. Have a minimum high school grade point average of 2.50.

2. Pass an interview with the Program Coordinator and the Academic Director of the Sciences and Technology Department. In the Metropolitan Campus the interview will be conducted when necessary.

Requirements for the Bachelor of Science Degree in Biomedical Sciences

General Education Requirements	42 credits
Major Requirements	56-57 credits
Prescribed Distributive Requirements	12 credits
Elective Courses	10 credits
Total	120-121 credits

General Education Requirements - 42 credits

Forty-two (42) academic credits are required as explained in the General Education Requirements for High Schools section. Students in this Program will take GEMA 1200 in the Basic Skills in Mathematics category. Students are exempt from taking courses from the Scientific and Technological Context category and the course GEHP 3000: Comprehensive Health and Quality of Life from the Health and Quality of Life Category.

Major Requirements - 56 o 57 credits

BMSC 2210	Human Genetics	3
BMSC 3011	Fundamentals of Human Anatomy and Physiology I	3
BMSC 3012	Fundamentals of Human Anatomy and Physiology Ii	3
BMSC 4015	Biochemistry of Human Physiology	3
BMSC 4020	Biomedical Ethics	3
BIOL 1101	General Biology I	3
BIOL 1102	General Biology II	3
BIOL 1103	Biology Skills Laboratory I	1
BIOL 1104	Biology Skills Laboratory II	1
BIOL 3105	General Microbiology	4
CHEM 1111	General Chemistry I	4
CHEM 2212	General Chemistry II	4
CHEM 2221	Organic Chemistry I	4
CHEM 2222	Organic Chemistry II	4
MATH 1500	Precalculus	5
PHYS 3001	General Physics I	4
PHYS 3002	General Physics II	4

MATH 1511	Precalculus I	3
MATH 1512	Precalculus II	3

Prescribed Distributive Requirements - 12 credits

Twelve (12) credits from the following courses:

BIOL 2153	Biostatistics	3
BIOL 3405	Immunology	3
BIOL 4305	Medical Microbiology	3
BIOL 4405	Embryology	3
BIOL 4494	Pharmacology	3
BIOL 4604	Cellular and Molecular Biology	3
BIOL 4905	Introduction to Pathology	3
CHEM 3320	Analytical Chemistry	4
MATH 2251	Calculus I	5
GEEN or ENGL	English - Select 3 credits from the GEEN or ENGL categories	3

Note: Students of the Ponce Campus must include BIOL 4604 among the courses selected to complete the twelve (12) Prescribed Distributive required credits.

Minor in Biomedical Sciences

The Minor in Biomedical Sciences presents an interdisciplinary curriculum that aspires to develop in the student the fundamental skills for the application of the knowledge in industry, research laboratories and graduate schools. This minor is aimed at students enrolled in the programs of Bachelor's degrees in Forensic Sciences and Microbiology.

The Ponce Campus is authorized to offer this minor.

Requirements for the Minor in Biomedical Sciences - 20-21 credits

Courses for the Minor in Biomedical Sciences

BMSC 2210	Human Genetics	3
BMSC 3011	Fundamentals of Human Anatomy and Physiology I	3
BMSC 3012	Fundamentals of Human Anatomy and Physiology Ii	3
BMSC 4015	Biochemistry of Human Physiology	3
BMSC 4020	Biomedical Ethics	3

Select two courses from the following

BIOL 1102	General Biology II	3
BIOL 2153	Biostatistics	3
BIOL 3405	Immunology	3
BIOL 4494	Pharmacology	3
BIOL 4604	Cellular and Molecular	3

	Biology	
BIOL 4605	Cellular and Molecular Biology Skills Laboratory	2
BIOL 4905	Introduction to Pathology	3

Biopsychology (BS)

Biopsychology (BS)

The Bachelor of Science in Biopsychology is designed to develop the basic competencies related to the study of the biological foundations of human behavior. The program emphasizes the development of an analytical and reflexive capability to address the problems of human behavior within an interdisciplinary context. In addition, it aims to prepare alumni to work or pursue graduate studies in fields related to Biopsychology.

The Metropolitan Campuses is authorized to offer this program.

Competencies Profile of Graduates

The program of the Bachelor's Degree in Sciences in Biopsychology is designed to develop the core competencies that allow the student to:

Knowledge

Demonstrate knowledge and understanding of:

1. basic knowledge of the concepts, principles and theories related to biology and psychology.

2. the ability to integrate information from multiple sources in biology and psychology relevant to the study of the problems of human behavior.

Skills

1. Apply scientific models or processes in solving problems related to the study of biopsychology.

2. Properly use equipment and materials relevant to the study of biopsychology.

3. Apply the appropriate methodology in solving problems related to biopsychology.

Attitudes

1. Identify ethical situations through appropriately informed and responsible explanations.

2. Demonstrate a critical decision making attitude based on information generated by biopsychological

research.

Requirements for the Bachelor in Sciences in Biopsychology

General Education Requirements	42 credits
Core Requirements	30 credits
Major Requirements	38 credits
Prescribed Distributive Requirements	12 credits
Elective Courses	3 credits
Total	125 credits

General Education Requirements - 42 credits

Forty-two (42) credits are required as explained in the General Education Requirements for Bachelor's Degrees section. Students are exempt from taking courses in the categories of Scientific and Technological Context, and Health and Quality of Life (GEHP 3000). Students in this program will take GEMA 1200 in the Basic Mathematics Skills category.

Core Requirements - 30 credits

BIOL 1101	General Biology I	3
BIOL 1102	General Biology II	3
BIOL 1103	Biology Skills Laboratory I	1
BIOL 2100	Introduction to Neurobiology	3
BIPS 1200	General Biopsychology	3
CHEM 1111	General Chemistry I	4
CHEM 2212	General Chemistry II	4
MATH 1511	Precalculus I	3
MATH 1512	Precalculus II	3
PSYC 1051	General Psychology I	3

Major Requirements - 38 credits

BIOL 3010	Genetics	3
BIOL 3106	Human Anatomy and Physiology	4
BIPS 3900	Neuroscience of Human Behavior	3
BIPS 4900	Integrative Seminar on Biopsychology	3
CHEM 2221	Organic Chemistry I	4
CHEM 2222	Organic Chemistry II	4
MATH 2100	Introduction to Probability and Statistics	3
PHYS 3001	General Physics I	4
PHYS 3002	General Physics II	4
PSYC 3200	Comparative Psychology	3
PSYC 4234	Psychology of Personality	3

Prescribed Distributive Requirements - 12 credits

The student will select six (6) credits from the following courses:

BIOL 4200	Neuroscience	3
BIOL 4604	Cellular and Molecular Biology	3
BIOL 4494	Pharmacology	3
BIOL 4960	Bioethics	3
MATH 2251	Calculus I	5

Select six (6) credits from the following courses:

PSYC 2010	Developmental Psychology	4
PSYC 3100	Learning	3
PSYC 3144	Motivation and Emotion	3
PSYC 3300	Social Psychology	3
PSYC 397_	Special Topics	3
PSYC 4213	Psychopathology	3

Minor in Biopsychology

The minor in Biopsychology is for students who intend to continue studies in Neuroscience, Medicine, Dentistry and graduate programs in sciences related to human behavior. It develops in students the basic competencies related to the integration of the general concepts of biology and psychology.

The Metropolitan Campus is authorized to offer this minor.

Requirements of the Minor in Biopsychology - 26 or 27 credits

Courses for the Minor in Biopsychology

BIOL 1101	General Biology I	3
BIOL 1102	General Biology II	3
BIOL 1103	Biology Skills Laboratory I	1
BIOL 1104	Biology Skills Laboratory II	1
BIOL 2100	Introduction to Neurobiology	3
BIOL 3106	Human Anatomy and Physiology Or	4
BMSC 3011	Fundamentals of Human Anatomy and Physiology I	3
BIPS 1200	General Biopsychology	3
BIPS 3900	Neuroscience of Human Behavior	3
PSYC 1051	General Psychology I	3

Select three (3) credits from the following courses:

BIOL 4200	Neuroscience	3
PSYC 3144	Motivation and Emotion	3

PSYC 3200	Comparative Psychology	3
PSYC 3300	Social Psychology	3

Biotechnology (AAS)

The Associate of Applied Science Degree Program in Biotechnology has as its goal the formation of professionals who possess the knowledge, skills and attitudes that will allow them to make responsible contributions to the scientific development of our society and advance biotechnology. To achieve this goal, the Program aims to enrich the knowledge and skills of students in the area of biotechnology by offering basic and intermediate level courses. The Program will prepare students to work in research laboratories and in the development of biosciences. It will also develop students' competencies that will allow them to work in industry or in other agencies as technical personnel with knowledge focused in the area of biotechnology.

The Barranquitas Campus is authorized to offer this program.

Competencies Profile of Graduates

This Program is designed to develop the competencies that will enable students to:

Knowledge

1. Know the importance of the interdisciplinary character of biotechnology.

2. Know the foundations of the biological, chemical, physical, mathematical and the informatics processes that are the base of biotechnology.

3. Know the biotechnological processes that can be applied to generate products and services in the medical, environmental, agricultural, and industrial areas, among others.

4. Know the fundamental concepts of live organisms and of microorganisms.

5. Know the genetic processes that are developed in the cell, as well as the structure and function of nucleic acids and their role in genetic information.

6. Know the importance the contributions of biotechnology in the development of knowledge.

Skills

1. Apply the knowledge of biotechnology in basic research in the area.

2. Identify suitable instrumental and informatics technical skills for concrete biotechnological processes.

3. Apply the scientific method, the skills and the basic and complex laboratory techniques for problem solving in the biotechnology area.

4. Analyze the processes of the growth of cells and biopolymers for the manufacture of biological products in order that these may meet the principles of quality and with the requirements and regulations that apply to the biotechnological industry.

5. Analyze the principles and the application of the techniques of molecular biotechnology and their benefits for human beings.

Attitudes

1. Show appreciation for genetic attributes in their natural form.

2. Value the ethical and moral principles which must govern biotechnology.

3. Show respect for the environment.

Requirements for the Associate of Applied Science Degree in Biotechnology

General Education Requirements	24 credits
Major Requirements	38 credits
Total	62 credits

General Education Requirements - 24 credits

GESP	Spanish - Select 6 credits from the GESP category	6
GEEN	English - Select 6 credits from the GEEN category	6
GEP-GECF 1010	Introduction to the Christian Faith	3
GEP-GEIC 1010	Information and Computing Technologies	3
GEP-GEMA 1200	Fundamentals of Algebra	3
GEP-GEHS 2010	Historical Process of Contemporary Puerto Rico Or	3
GEP-GEEC 2000	Entrepreneurial Culture	3

Major Requirements - 38 credits

BIOL 1101	General Biology I	3
BIOL 1102	General Biology II	3
BIOL 1103	Biology Skills Laboratory I	1
BIOL 2013	Biol 2013 Skills Laboratory II	1
BIOL 2153	Biostatistics	3
BIOL 3105	General Microbiology	4
BIOT 2160	Molecular Genetics	3
BIOT 2250	Biomanufacturing	4
BIOT 3250	Molecular Biotechnology	3
MATH 1500	Precalculus	5
CHEM 1111	General Chemistry I	4
CHEM 2212	General Chemistry II	4

Biotechnology (BS)

Biotechnology (BS)

The Bachelor of Science degree in Biotechnology aspires to develop professionals with competencies to search for solutions to society's problems, by applying the knowledge and skills of Biotechnology. The curriculum includes the development of skills for the appropriate administration of modern technologies applied to life for the production of consumer goods. The Program promotes the development of a responsible attitude to the processes for decision making related to the environment, bioethics, health and industry. Graduates of this Program will be able to work in the field of biotechnology or in research. They may, also, aspire to continue graduate or professional studies.

The Aguadilla, Arecibo, Barranquitas, Bayamón, Guayama and Ponce campuses are authorized to offer this Program.

Competencies Profile of Graduates

This Program is designed to develop the competencies that will enable students to:

Knowledge

Knowledge and understanding of:

1. The concepts of microbiology, biochemistry, cellular and molecular biology, immunology, genetics and bioinformatics related to the biotechnology area.

2. The techniques applied in biotechnology to solve environmental and clinical situations and to carry out research.

3. The correct use of the technical vocabulary inherent to the field of biotechnology to communicate effectively with scientific, professional and academic communities.

4. The theoretical bases related to the manipulation of

nucleic acids, cellular proteins and cultures in research and the labor field.

5. The basic components to write scientific research reports.

Skills

1. Design and carry out experimental procedures at the cellular, molecular and biochemical levels, aimed at understanding the biological processes.

2. Analyze the results obtained when applying purification techniques of proteins, cellular cultures and extraction and analysis of the genetic matter obtained from plants, animals and microorganisms.

3. Write reports using the scientific publication format to present and to reveal the research results.

4. Coordinate and participate the activities of technical work groups to assure the effectiveness of the research processes.

5. Use English and Spanish correctly in oral and written technical communications.

6. Identify and use the information available in databases and the tools of basic bioinformatics for different projects.

Attitudes

1. Demonstrate bioethics, legal and moral consciousness in decision making in aspects that arise in the area of the biotechnology.

2. Demonstrate responsibility, cooperation and leadership when working in a team in the field of biotechnology.

3. Make a case for the impact of biotechnology in agriculture, environment, industry, health and in general in problem solving.

4. Demonstrate a positive attitude towards self-teaching and the update of the knowledge in regard to the changes occurring in the area of biotechnology.

5. Value the importance of biodiversity and the conservation of ecosystems.

Graduation Requirements

In order to fulfill the graduation requirements for the Bachelor of Science degree in Biotechnology, students must:

1. Obtain a minimum grade index of 2.50 in the major.

2. Obtain a minimum grade of C in the Biotechnology courses (BIOT) that are part of the Major Requirements.

Requirements for the Bachelor of Science Degree in Biotechnology

General Education Requirements	45 credits
Major Requirements	45 credits
Related Course Requirements	37 credits
Elective Courses	3 credits
Total	130 credits

General Education Requirements - 45 credits

Forty-five (45) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees." Students will take the course GEMA 1200 in the Basic Skills in Mathematics category. Students of this Program are exempt from the category of Scientific and Technological Context.

Major Requirements - 45 credits

BIOT 3250	Molecular Biotechnology	3
BIOT 3750	Recombinant DNA Technology	3
BIOT 4620	Tissue Culture and Technical Applications	3
BIOT 4928	Protein Analysis and Purification	3
BIOT 4710	Agricultural and Environmental Biotechnology	3
BIOT 4954	Research Methods in Biotechnology	3
BIOL 1101	General Biology I	3
BIOL 1102	General Biology II	3
BIOL 1103	Biology Skills Laboratory I	1
BIOL 1104	Biology Skills Laboratory II	1
BIOL 2153	Biostatistics	3
BIOL 3010	Genetics	3
BIOL 3105	General Microbiology	4
BIOL 3405	Immunology	3
BIOL 4433	Industrial Microbiology	3
BIOL 4604	Cellular and Molecular Biology	3

Related Course Requirements - 37 credits

CHEM 1111	General Chemistry I	4
CHEM 2212	General Chemistry II	4
CHEM 2221	Organic Chemistry I	4
CHEM 2222	Organic Chemistry II	4

CHEM 3320	Analytical Chemistry	4
CHEM 4220	Biochemistry	4
MATH 1500	Precalculus	5
PHYS 3001	General Physics I	4
PHYS 3002	General Physics II	4

Minor in Marine Biotechnology

Requirements for the Minor in Marine Biotechnology - 18 credits

The Minor in Marine Biotechnology provides students with the knowledge and skills required to perform in a work environment dedicated to the marine bioscience industry.

The Minor is for students in programs related to natural sciences who meet the requirements for the listed courses.

The Barranquitas and Guayama campuses are authorized to offer this Minor.

Courses for the Minor in Marine Biotechnology

BIOT 2015	Genome Biology of Marine Organisms	3
BIOT 3010	Marine Biochemistry	3
BIOT 3020	Marine Microbiology	3
BIOT 3025	Biological Oceanography	3
BIOT 3042	Comparative Genoma	3
BIOT 397_	Special Topics	3

Recommended Elective

CHEM 4750 (p. 441)

Minor in Agricultural Biotechnology

This minor is for students of the Bachelor of Science in Biotechnology.

The Bayamón Campus is authorized to offer this minor.

Requirements for the Minor in Agricultural Biotechnology - 20 credits

Courses for the Minor in Agricultural Biotechnology

BIOT 3250	Molecular Biotechnology	3
BIOT 3360	Transgenic Plants and Food Security	3
BIOT 3370	Biotechnology of Plants	4
BIOT 4710	Agricultural and Environmental Biotechnology	3
BIOT 4900	Genomic Transformation for The Improvement of Crops	4

Minor in Biotechnology

The Aguadilla, Arecibo, Barranquitas, Bayamón, Guayama and Ponce campuses are authorized to offer this minor.

This minor is for students who have approved the requirements of the courses listed below:

Requirements for the Minor in Biotechnology - 18 credits

Courses for the Minor in Agricultural Biotechnology

BIOT 3250	Molecular Biotechnology	3
BIOT 3750	Recombinant DNA Technology	3
BIOT 4710	Agricultural and Environmental Biotechnology	3
BIOT 4928	Protein Analysis and Purification	3
BIOL 3405	Immunology	3
BIOL 4433	Industrial Microbiology	3

Business Administration (AAS)

The Associate of Applied Sciences Degree in Business Administration offers the student the opportunity to develop the basic skills and knowledge in the area of business administration and enterprise development. The Program offers the student the opportunity to continue studies leading to the Bachelor's degree in Business Administration. The student must pass the courses required in the major with the minimum grade of C.

All campuses are authorized to offer this Program. The Aguadilla, Bayamón and Ponce campuses are also authorized to offer this Program through online education.

Competencies Profile of Graduates

Knowledge

Demonstrate knowledge of:

1. entrepreneurship and innovation as the basis of the economic development of the country.

2. the basic elements in the areas of: accounting, business communication, business development, economics, statistics, management, finance, marketing, quantitative methods, international business, and business information systems.

3. the local and international business environment.

4. the ethical and legal aspects that apply to the

development and operation of a company.

Skills

1. Apply skills in areas related to business creation or administration.

2. Communicate effectively both orally and in writing in English and Spanish.

3. Use critical thinking in the analysis of the local and international business environment.

4. Work as a team and demonstrate leadership in the business arena.

5. Apply legal and ethical aspects in business administration.

6. Use information technologies for analysis, decision making and problem solving in business administration.

Attitudes

1. Show interest in participating in professional activities that contribute to their academic and professional development.

2. Value a healthy organizational culture that interacts with the internal and external environment of the company.

3. Manifest an ethical, legal and socially responsible attitude in the processes of creation, development or administration of a company.

Requirements for the Associate of Applied Science Degree in Business Administration

General Education Requirements	24 credits
Major Requirements	35 credits
Related Requirements	3 credits
Total	62 credits

General Education Requirements - 24 credits

GESP	Spanish - Select 6 credits from the GESP category	6
GEEN	English - Select 6 credits from the GEEN category	6
GEP-GECF 1010	Introduction to the Christian Faith	3
GEP-GEIC 1010	Information and Computing Technologies	3
GEP-GEMA 1200	Fundamentals of Algebra	3
GEP-GEHS 2010	Historical Process of Contemporary Puerto Rico	3

Major Requirements - 32 credits

ACCT 1161	Introduction to Financial Accounting	4
ACCT 1162	Introduction to Managerial Accounting	4
INTB 2100	Introduction to International Business	3
BADM 1900	Fundamentals of Business Management	3
BADM 3900	Information Systems in Organizations	3
ENTR 2200	Foundations of Entrepreneurship	3
FINA 2101	Corporate Finance I	3
MAEC 2211	Principles of Microeconomics	3
MAEC 2221	Basic Statistics	3
MKTG 1210	Introduction to Marketing	3
OMSY 3030	Business Communication in Spanish Or	3
OMSY 3040	Business Communication in English	3

Related Requirements - 3 credits

GEP-GEEC 2000	Entrepreneurial Culture	3

Business Administration (BBA - Core Requirements)

Competencies Profile of Graduates

The core component of the Bachelor of Business Administration is designed to develop the competencies that allow the student to:

Knowledge

Demonstrate knowledge of:

1. entrepreneurship and innovation as the basis of the economic development of the country.

2. the basic elements in the areas of: accounting, business communication, business development, economics, statistics, management, finance, marketing, quantitative methods, international business, and business information systems.

3. the local and international business environment.

4. the ethical and legal aspects that apply to the development and operation of a company.

Skills

1. Apply skills in areas related to business creation or administration.

2. Communicate effectively both orally and in writing in English and Spanish.

3. Use critical thinking in the analysis of the local and international business environment.

4. Work as a team and demonstrate leadership in the business arena.

5. Apply legal and ethical aspects in business administration.

6. Use information technology for analysis, decision making and problem solving in business administration.

Attitudes

1. Show interest in participating in professional activities that contribute to their academic and professional development.

2. Value a healthy organizational culture that interacts with the internal and external environment of the company.

3. Manifest an ethical, legal and socially responsible attitude in the processes of creation, development or administration of a company.

Requirements

Core Requirements - 47 credits

ACCT 1161	Introduction to Financial Accounting	4
ACCT 1162	Introduction to Managerial Accounting	4
BADM 1900	Fundamentals of Business Management	3
BADM 3313	The Law and The Businesses	3
BADM 3900	Information Systems in Organizations	3
FINA 2101	Corporate Finance I	3
INTB 2100	Introduction to International Business	3
MAEC 2140	Fundamentals of Quantitative Methods	3
MAEC 2211	Principles of Microeconomics	3
MAEC 2212	Principles of Macroeconomics	3
MAEC 2221	Basic Statistics	3
MAEC 2222	Managerial Statistics	3
MKTG 1210	Introduction to Marketing	3
OMSY 3030	Business Communication in Spanish Or	3
OMSY 3040	Business Communication in English	3
OPMS 3000	Operations Management of Manufacturing and Service	3

Cardio-Respiratory Care (AAS)

The Cardio-Respiratory Care Program has as its main goal the preparation of technicians and professionals in the area of cardio-respiratory care at the associate level. Through this Program the student will obtain the knowledge and skills necessary to provide comprehensive and high quality care to clients, relatives and community in different scenarios. The program aims to:

1. Prepare a respiratory therapist with the knowledge and skills necessary to offer cardio-respiratory care in harmony with the exigencies of Law #24, which regulates respiratory care practice in Puerto Rico.

2. Contribute to the support and maintenance of the integral health of the community served.

3. Offer excellent care based on legal and ethical-moral values.

It is expected that students who decide to exit the program to work as Associate Degree therapists in Cardio-Respiratory Care will be able to:

1. Develop and implement cardio-respiratory care to support, maintain and restore the respiratory health of patients with cardiopulmonary problems.

2. Use established communication channels to administer respiratory therapy to patients in acute or critical condition according to the life cycle.

3. Collaborate with other members of the health team to assist in the diagnosis, treatment, evaluation, control, rehabilitation and prevention in patients in order to offer quality care.

4. Consider research findings in the respiratory field to

justify the interventions.

5. Have the knowledge and minimum skills to perform their role effectively when offering care to patients.

6. Develop skills to handle the technological equipment when offering cardio-respiratory care in any scenario where they may offer their services.

7. Comply with the provisions of the laws that regulate their practice and with the code of ethics to uphold the standards of honesty.

The Aguadilla and Barranquitas campuses are authorized to offer this Program.

Competencies Profile of Graduates

This program is designed to develop the competencies that will enable students to:

Knowledge

Demonstrate knowledge and understanding of:

1. The elements of the natural and social sciences and of cardiorespiratory care related to the offering of health services to clients with respiratory problems.

2. The respiratory care required in harmony with the diverse modalities of client care, the family and the community.

3. The procedures and techniques to offer cardiorespiratory care.

4. The pharmacological aspects of the medicines used in clients with cardiorespiratory problems.

Skills

1. Apply the theoretical-scientific concepts and the psychomotor skills in the role as a technician of cardiorespiratory care in different scenarios.

2. Apply the care modalities that they offer in the prevention, promotion, maintenance and restoration of the respiratory health phases of the client.

3. Participate in the development of the care plan and select the equipment they are going to use in providing the client's care.

4. Use effective communication techniques during their interventions with the client, the family and the members of the multidisciplinary team.

Attitudes

1. Assume responsibility for their personal and professional growth while considering technological, social, research and professional changes.

2. Integrate moral values and the ethical, legal and spiritual principles when offering cardiorespiratory care.

3. Show responsibility for their actions when performing their profession.

Admission Requirements

1. Comply with all admission norms established in the General Catalog.

2. To be a candidate for admission to the Program, students must have:

    a. a minimum average of 2.50.

    b. a negative Criminal Record issued within the last sent 30 days by the Police of Puerto Rico.

    c. a certificate of health with one year of validity issued by the Department of Health.

    d. a Vaccination Certificate against Hepatitis B and Chickenpox, among others, required by the Department of Health of Puerto Rico.

    e. a Negative Doping Test.

Requirements for Clinical Practice:

To be admitted to a clinical practice agency the requirements are:

1. A negative criminal record issued within the last 30 days by the Police of Puerto Rico.

2. A current health certificate issued by the Department of Health.

3. A certificate of vaccination against Hepatitis B.

Some agencies and courses have additional requirements. Students are responsible for meeting any other requirement that may be required by the practice agency, such as a current CPR Certificate, Negative Doping Test, and a negative certificate of Culture of Nose and Throat, among others.

Internal and External Transfer Requirements

1. Meet all admission norms for transfer students established in the General Catalog and those of the corresponding campus.

2. Admission to the Program or to take courses of the major in combined registration for students of another campus of this University requires the previous authorization of both program directors.

Requirements for the Associate of Applied Science Degree in Cardio-Respiratory Care

General Education Requirements	24 credits	
Major Requirements	52 credits	
Total	76 credits	

General Education Requirements - 24 credits

GESP	Spanish - Select 6 credits from the GESP category	6
GEEN	English - Select 6 credits from the GEEN category	6
GEP-GECF 1010	Introduction to the Christian Faith	3
GEP-GEIC 1010	Information and Computing Technologies	3
GEP-GEMA 1200	Fundamentals of Algebra	3
GEP-GEHS 2010	Historical Process of Contemporary Puerto Rico Or	3
GEP-GEEC 2000	Entrepreneurial Culture	3

Major Requirements - 52 credits

CARD 1130	Cardio-Respiratory Care I	3
CARD 1210	Introduction to Theory and Practice in Cardio- Respiratory Care	3
CARD 1220	Pharmacology Applied to Cardio-Respiratory Care	2
CARD 1231	Cardio-Respiratory Care II	3
CARD 2110	Cardio-Respiratory Pathophysiology	3
CARD 2120	Diagnostic Tests and Pulmonary Function	2
CARD 2140	Cardio-Respiratory Care Clinics and Rehabilitation	3
CARD 2190	Integration of Fundamental Knowledge	2
CARD 2233	Mechanical Ventilation	5
CARD 2234	Practice in Mechanical Ventilation	2
CARD 2910	Integrated Practice I	4
BIOL 1003	Basic Biological Concepts	3
BIOL 2151	Human Anatomy and Physiology I	3
BIOL 2152	Human Anatomy and Physiology Ii	3
BIOL 2154	Fundamentals of Microbiology	3
CHEM 2110	General Chemistry for Health Sciences	4
PHYS 1013	General Physics and its Applications	4

Chemistry (BS)

Chemistry (BS)

The Bachelor of Science in Chemistry is designed to provide extensive knowledge in chemistry with an emphasis on scientific reasoning, problem solving and the use of laboratory techniques and instrumentation that foster the development of competent, responsible and ethical leaders.

The Program responds to the advancements in the cognitive sciences and incorporates new technology into the teaching-learning process. It foments the search for scientific knowledge leading to students' intellectual and professional development.

The Program offers the Bachelor of Science Degree in Chemistry and is designed for students planning to work as chemists in industry or government or to take graduate studies in chemistry, or in any other branch of science.

The Arecibo, Guayama, Metropolitan and San Germán campuses are authorized to offer this Program.

Program Objectives

The program aims to develop professionals capable of:

1. Integrate knowledge of chemistry for problem solving and scientific information analysis.

2. Develop the technical and communication skills necessary to effectively and safely carry out laboratory and scientific research experiences.

3. Develop the ability to work in a team and apply the ethical principles of the profession.

Competencies Profile of Graduates

The program is designed to permit the development of the following competencies:

Knowledge

To demonstrate knowledge and understanding of:

1. the physical properties and the chemical behavior of the substance based on its composition and structure.

2. the chemical reactions based on their mechanisms and the factors that affect them.

3. the procedures and regulations for the handling, use and disposal of chemical agents.

Skills

1. To demonstrate effective written and oral communication, in English and Spanish and in the analysis of technical texts.

2. To solve qualitative and quantitative problems of chemistry using instrumentation and suitable technology.

3. To interpret experimental data and scientific literature.

Attitudes

1. To act in agreement with the ethical standards and the laws that regulate the practice of the profession.

Requirements for the Bachelor of Science Degree in Chemistry

General Education Requirements	45 credits
Major Requirements	44 credits
Related Requirements	26-27 credits
Prescribed Distributive Requirements	6 or 7 credits
Elective Courses	3 credits
Total	124 or 126 credits

General Education Requirements - 45 credits

Forty-five (45) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees." Students will take the course GEMA 1200 in the Basic Skills in Mathematics category. Students of this Program are exempt from taking the course GEST 2020 or 2030 in the Scientific and Technology Context category.

Major Requirements - 44 credits

CHEM 1111	General Chemistry I	4
CHEM 2212	General Chemistry II	4
CHEM 2221	Organic Chemistry I	4
CHEM 2222	Organic Chemistry II	4
CHEM 3230	Structure Determination by Spectroscopic Analysis	3
CHEM 3320	Analytical Chemistry	4
CHEM 3400	Computation Laboratory and Its Applications to Chemistry	2
CHEM 3910	Physical Chemistry: Thermodynamics	4
CHEM 3920	Physical Chemistry: Quantum and Kinetic	4
CHEM 4200	Advanced Inorganic Chemistry	3
CHEM 4240	Instrumental Analytical Chemistry	5
CHEM 4965	Senior Seminar	3

Related Requirements - 26 or 27 credits

BIOL 1101	General Biology I	3
BIOL 1103	Biology Skills Laboratory I	1
MATH 1500	Precalculus	5
	Or	
MATH 1511	Precalculus I	3
	And	
MATH 1512	Precalculus II	3
MATH 2251	Calculus I	5
MATH 2252	Calculus II	4
PHYS 3001	General Physics I	4
PHYS 3002	General Physics II	4

Prescribed Distributive Requirements - 6 or 7 credits

A minimum of six (6) credits from the following courses is required:

CHEM 3360	Food Chemistry	3
CHEM 3370	Green Chemistry	3
CHEM 3380	Introduction to Nanotechnology	3
CHEM 3390	Biotechnology for Chemists	3
CHEM 3900	Research in Chemistry	1 to 3
CHEM 397_	Special Topics	3
CHEM 4220	Biochemistry	4

Minor in Chemistry

The Arecibo, Barranquitas, Bayamón, Guayama, Metropolitan and San Germán campuses are authorized to offer this minor.

Requirements for the Minor in Chemistry - 24 credits

In order to certify a minor in chemistry, students must have approved a minimum of twenty-four (24) credits from the chemistry curriculum (courses CHEM) of which, a

minimum of nine (9) credits must be from 3000 or 4000 level courses.

It is the responsibility of the student to meet the course requirements for the minor.

Commercial Pilot (AAS)

The Associate of Applied Science degree in Commercial Pilot has as its goal the formation of professionals who possess the knowledge, skills, and attitudes that will enable them to work as commercial pilot.

The Bayamón Campus is authorized to offer this Program.

Competencies Profile of Graduates

The Program is designed to develop the competencies that will enable students to:

Knowledge

1. Understand the professional ethics and decision making in the aviation industry.

2. Know the contemporary problems in the aviation industry.

Skills

1. Apply knowledge of mathematics, sciences and applied sciences to the disciplines related to aviation.

2. Communicate effectively both orally and in writing.

3. Analyze and process data.

4. Work effectively in multidisciplinary and diverse work teams.

5. Use the techniques, skills and modern technology necessary for professional performance.

6. Apply the pertinent knowledge in the identification and solution of problems.

Attitudes

1. Engage in and recognize the need and the capacity to participate in a process of life-long learning.

Admission Requirements

To be a candidate for admission to the program, the student must comply with the following:

1. Be a high school graduate or equivalent with a minimum GPA of 2.50.

2. Present a First Class Medical Certificate issued by a doctor of medicine recognized by the Federal Aviation Administration (14 CFR Part 67), in order to take flight laboratory courses.

3. Have an interview in English, with a panel directed by the chief of flight instructors of the Aeronautical School or the designated person and be recommended for admission by the panel.

Transfer or Change of Major Requirements

1. Have a minimum GPA of 2.50 from the campus or institution of origin.

2. Present a First Class Medical Certificate issued by a doctor of medicine recognized by the Federal Aviation Administration (14 CFR Part 67), in order to take flight laboratory courses.

3. Have an interview in English, with a panel directed by the chief of flight instructors of the Aeronautical School or the designated person and be recommended for admission by the panel.

Graduation Requirements

1. Achieve a minimum general and major grade point average of 2.50.

2. Approve the courses AWSC 2116, AWSC 2117, AWSC 3155, and AWSC 3160 with a minimum grade of C.

Requirements for the Associate of Applied Science Degree in Commercial Pilot

General Education Requirements	24 credits
Major Requirements	36 credits
Total	60 credits

General Education Requirements - 24 credits

GESP	Spanish - Select 6 credits from the GESP category	6
GEEN	English - Select 6 credits from the GEEN category	6
GEP-GECF 1010	Introduction to the Christian Faith	3
GEP-GEIC 1010	Information and Computing Technologies	3
GEP-GEMA 1200	Fundamentals of Algebra	3

GEP-GEHS 2010	Historical Process of Contemporary Puerto Rico Or	3
GEP-GEEC 2000	Entrepreneurial Culture	3

Major Requirements - 36 credits

AWSC 2000	Introduction to Aeronautics and Space	3
AWSC 2116	Private Pilot Flight Laboratory	1
AWSC 2117	Private Pilot	6
AWSC 2130	English Proficiency for Aviation Professionals	3
AWSC 3155	Instrument Rating	4
AWSC 3160	Commercial Pilot	3
AWSC 3300	Aviation Law	3
AWSC 3411	Principles of Air Traffic Control	3
AWSC 3600	Aviation Safety and Security	3
AWSC 4100	Career Development for Aerospace Professionals	1
AWSC 4305	Aviation Meteorology	3
AWSC 4310	Human Factors in Aviation	3

Communications (AA)

The Associate of Arts Degree in Communications provides a basic preparation in the field of social communication, which includes the theoretical perspective, emergent trends, writing skills and production, in addition to research techniques and creative development. The program has been designed with a multidisciplinary curricular content that facilitates the preparation of professionals able to compete in the job market or for self-employment. It permits the student to continue towards the Bachelor of Arts degree in Communications.

The Ponce Campus is authorized to offer this program in campus and through online education.

Program Objectives

The Associate of Arts Program in Communications aims to develop the following general objectives:

1. Generate the theoretical and practical knowledge related to communications, adapted to the changes and new trends of the profession.

2. Analyze the problems of communication by research.

3. Integrate the values and ethical-legal principles related to the field of social communication into professional practice.

4. Develop oral and written communication skills, applied to the diverse communication formats.

5. Apply the knowledge and skills of the discipline to the creative solution of communication problems.

Competencies Profile of Graduates

This Program is designed to develop the competencies that will permit students to:

Knowledge

1. Identify the processes and methods of formal and informal research for the development of social communication projects.

2. Distinguish the formal and informal norms of ethical practice in the communication labor field.

3. Explain the communication platforms for mass and interpersonal use.

Skills

1. Use the language properly, in harmony with the appropriate style for the professional applications.

2. Develop creative projects for the implementation of support activities in social and commercial communication.

3. Use the major and current technologies for the administration of communication in different scenarios.

Attitudes

1. Value the importance of performing the professional work correctly, reasonably filling the expectations of the clients.

2. Exhibit a high degree of ethics and responsibility in the practice of the profession.

3. Show the capacity to solve problems in an innovating and creative form.

4. Demonstrate responsibility and commitment with their professional development.

Requirements for the Associate Degree in Arts in Communications

General Education Requirements	24 credits
Major Requirements	36 credits
Total	60 credits

General Education Requirements - 24 credits

GESP	Spanish - Select 6 credits from the GESP category	6
GEEN	English - Select 6 credits from the GEEN category	6
GEP-GECF 1010	Introduction to the Christian Faith	3
GEP-GEIC 1010	Information and Computing Technologies	3
GEP-GEMA 1000	Quantitative Reasoning	3
GEP-GEHS 2010	Historical Process of Contemporary Puerto Rico Or	3
GEP-GEEC 2000	Entrepreneurial Culture	3

Major Requirements - 36 credits

COMU 1000	Introduction to Communications	3
COMU 1010	Fundamentals of Graphic Communication	3
COMU 1020	Introduction to Communication Media	3
COMU 2000	Fundamentals of Journalism	3
COMU 2010	Writing for Mass Media	3
COMU 2020	Communication and Society	3
COMU 2197	Creative Project	3
COMU 3000	Research Processes in Communications	3
COMU 3021	Production for Multimedia	3
COMU 3970	Current Topics in Communications	3
COMU 4320	Legal and Ethical Aspects	3
MKTG 1210	Introduction to Marketing	3

Communication in Media Production (BS)

Communication in Media Production (BS)

The program of the Bachelor of Science Degree in Communication in Production for the Media provides a theoretical-practice preparation in the production of contents for the media. The areas of the media that are studied are: writing, photography, graphical design, sound, video and the Internet. The program, foments the business area and has an emphasis in the integration of media in harmony with the trends in the communications industry.

The Bayamón Campus is authorized to offer this Program.

Program Goals

1. To develop a journalist with a high ethical sense that will produce content for different mass media.

2. To develop a journalist with sensitivity and social commitment who will contribute to the advancement of communications.

Competencies Profile of Graduates

This program is designed to develop the competencies that will enable students to:

Knowledge

Demonstrate knowledge and understanding of:

1. the foundations, the theory and the ethical, legal and moral aspects, that govern the discipline of communications.

2. the computer programs and the equipment to produce content in the areas of: writing, sound, video, graphic design, photograph and Internet.

3. the basic concepts and the business procedures, the management and the administration for mass media.

Skills

1. To solve problems related to the study field.

2. To apply research techniques to create new knowledge and to solve problems in the discipline.

3. To integrate and apply the fundamental principles of the theory and the technique in the field of communications to real situations of the world of work.

4. To design, produce and transmit quality content with social responsibility.

5. To correctly use the technical vocabulary inherent to mass media and their emergent platforms.

6. To master the use and handling of the computer

programs and the equipment to produce content in the areas of: writing, sound, video, graphical design, photograph and Internet.

Attitudes

1. To value the importance of working in teams.

2. To demonstrate interest in the technological advances and the changes of the discipline and in the field of communications itself.

3. To recognize the importance of making decisions with responsibility, having in consideration the moral as well as the ethical and legal affairs of the profession.

Retention Requirements

Student must pass the courses required for the major with the minimum grade of C. In order to take continuation and advanced courses, they must have passed the prerequisites of these courses.

Graduation Requirements

Students must fulfill the general graduation requirements and achieve a minimum general grade point index of 2.25.

Requirements for the Bachelor of Science Degree in Communication in Media Production

General Education Requirements	48 credits
Major Requirements	70 credits
Prescribed Distributive Requirements	3 credits
Elective Courses	3 credits
Total	124 credits

General Education Requirements - 48 credits

Forty-eight (48) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees."

Major Requirements - 70 credits

COMU 1020	Introduction to Communication Media	3
COMU 1025	Introduction to Graphic Production	3
COMU 1031	Photographic Techniques	3
COMU 1035	Creative Writing for Media	3
COMU 1045	Editorial Graphic Production	3
COMU 1051	Sound Production Techniques	3
COMU 2123	Journalistic Writing for The	3
	Media	
COMU 2130	Planning for Media	3
COMU 2340	Video Production Techniques	3
COMU 2513	Graphic Production for Identity of Brands	3
COMU 2610	Illumination in Photography	3
COMU 2621	Digital Photographic Manipulation	3
COMU 2613	Radio Production	3
COMU 3040	Video Field Production	3
COMU 3043	Advanced Production for Radio	3
COMU 3345	Administration and Production of Content for Social Media	3
COMU 3410	Production of Multimedia Contents for Internet	3
COMU 3521	Advanced Production of Studio Videos I	3
COMU 4320	Legal and Ethical Aspects	3
COMU 4410	Management and Entrepreneurship for Mass Media	3
COMU 4444	Fundamentals of Media Research	3
COMU 4910	Supervised Practice (Bachelor's Degree)	4
MAEC 2221	Basic Statistics	3

Prescribed Distributive Requirements - 3 credits

3 credits are required from the following courses:

COMU 2520	Advanced Voice and Diction	3
COMU 3050	Seminar on Online Radio Production	3
COMU 3135	Writing of Dramatic Librettos	3
COMU 3140	Graphic Design for Video	3
COMU 3325	Photojournalism	3
COMU 3522	Advanced Production of Studio Videos II	3
COMU 4020	Design and Production of a Project for Social Media	3

Minor in Photography

The Bayamón Campus is authorized to offer this minor.

Requirements for the Minor in Photography - 18 credits

Courses for the Minor in Photography

COMU 1025	Introduction to Graphic Production	3
COMU 1031	Photographic Techniques	3
COMU 1032	Photography Business	3

COMU 1045	Editorial Graphic Production	3
COMU 2610	Illumination in Photography	3
COMU 2621	Digital Photographic Manipulation	3

Minor in Social Network Management

The Aguadilla and Bayamón campuses are authorized to offer this minor.

Requirements for the Minor in Social Network Management - 21 credits

Courses for the Minor in Social Network Management

COMU 1031	Photographic Techniques	3
COMU 1035	Creative Writing for Media	3
COMU 2240	Basic Principles of Video Production	3
COMU 2250	Foundations in Social Media Administration	3
MKTG 1210	Introduction to Marketing	3
MKTG 2220	Marketing Management	3
MKTG 2223	Consumer Behavior	3

Communications (BA)

Communications (BA)

The Bachelor of Arts in Communications aims to provide a theoretical and practical preparation in the field of social communication by emphasizing the areas of public relations and advertising. It includes the knowledge and management of communication media and administrative, research and technical skills. The Program has been designed with a multi-disciplinary curriculum content that propitiates the preparation of professionals able to compete in the employment market or for self-employment.

The Ponce Campus is authorized to offer this Program.

Competencies Profile of Graduates

This Program is designed to develop the competencies that will enable students to:

Knowledge

1. Identify the processes and methods of formal and informal research for the development of projects of public relations, advertising, and management of media.

2. Recognize the formal and informal norms of ethical practice of Public Relations and Advertising, as well as those of related professions.

3. Explain the communication platforms for massive and interpersonal use.

Skills

1. Use language satisfactorily, according to the appropriate style for professional applications.

2. Use research methods for project planning and evaluation.

3. Apply the correct steps for the achievement of the objectives in the efficient and effective accomplishment of a project.

4. Develop innovating strategies and tactics for the achievement of objectives.

5. Use current and leading technologies for the administration of communication in diverse scenarios.

6. Complete professional projects focused on achieving the objectives in an efficient and effective way, demonstrating the use of strategic planning.

Attitudes

1. Value the importance of performing their professional work correctly, reasonably filling the expectations of their clients.

2. Exhibit a high degree of ethics and responsibility in their profession.

3. Show the capacity to solve problems in an innovating and creative manner.

4. Demonstrate responsibility and commitment with their professional development.

Requirements for the Bachelor of Arts Degree in Communications

General Education Requirements	48 credits
Core Requirements	33 credits
Major Requirements	30 credits
Elective Courses	9 credits
Total	120 credits

General Education Requirements - 48 credits

Forty-eight (48) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees." Students of this Program will take the nine

credits in English Communication Skills in the sequences GEEN 1201, 1202, 2203 or 2311, 2312, 2313.

Core Requirements - 33 credits

COMU 1000	Introduction to Communications	3
COMU 1010	Fundamentals of Graphic Communication	3
COMU 1020	Introduction to Communication Media	3
COMU 2010	Writing for Mass Media	3
COMU 2020	Communication and Society	3
COMU 3000	Research Processes in Communications	3
COMU 3002	Psychology of Communication	3
COMU 3021	Production for Multimedia	3
COMU 4320	Legal and Ethical Aspects	3
BADM 1900	Fundamentals of Business Management	3
MKTG 1210	Introduction to Marketing	3

Major Requirements - 30 credits

COMU 2000	Fundamentals of Journalism	3
COMU 2030	Foundations of Public Relations	3
COMU 2031	Foundations of Advertising	3
COMU 3013	Public Relations Plan	3
COMU 3015	Advertising Projects	3
COMU 3025	Integral Communication of Brand Names	3
COMU 3970	Current Topics in Communications	3
COMU 4920	Internship	6
COMU 4973	Seminar in Public Relations and Publicity	3

Minor in Advertising

The Minor in Advertising is for students in Business Administration. Its purpose is to train the graduate in promotional and persuasive social communication skills to achieve marketing objectives. Students from other programs may opt for this minor, but they will be required to take the MKTG 1210 course.

The Ponce Campus is authorized to offer this minor.

Requirements for the Minor in Advertising - 21 credits

Courses for the Minor in Advertising

COMU 1000	Introduction to Communications	3
COMU 1020	Introduction to Communication Media	3

COMU 2000	Fundamentals of Journalism	3
COMU 2031	Foundations of Advertising	3
COMU 3000	Research Processes in Communications	3
COMU 3015	Advertising Projects	3
COMU 3025	Integral Communication of Brand Names	3

Minor in Communications

The Minor in Communications is for students of any major. It has the purpose of strengthening the skills and knowledge in the general management of public communication, applicable to any profession or citizen affair.

The Ponce Campus is authorized to offer this minor.

Requirements for the Minor in Communications - 21 credits

Courses for the Minor in Communications

COMU 1000	Introduction to Communications	3
COMU 1010	Fundamentals of Graphic Communication	3
COMU 1020	Introduction to Communication Media	3
COMU 2000	Fundamentals of Journalism	3
COMU 2020	Communication and Society	3
COMU 3021	Production for Multimedia	3
COMU 3970	Current Topics in Communications	3

Minor in Public Relations

The Minor in Public Relations is for students of any major. Its purpose is to strengthen skills and knowledge in strategic planning of communication projects of public interest and benefit.

The Ponce Campus is authorized to offer this minor.

Requirements for the Minor in Public Relations - 21 credits

Courses for the Minor in Public Relations

COMU 1000	Introduction to Communications	3
COMU 2010	Writing for Mass Media	3
COMU 2020	Communication and Society	3
COMU 2030	Foundations of Public Relations	3
COMU 3000	Research Processes in	3

	Communications	
COMU 3013	Public Relations Plan	3
COMU 3970	Current Topics in Communications	3

Computer Science (AAS)

The Program offers a theoretical and practical preparation aimed to develop professionals focused on the mastery of knowledge related to the technical and diversified areas of the discipline. In addition, it facilitates the development of logical reasoning skills, of analysis for problem solving, programming methodologies and use of tools associated with the computation field.

The Aguadilla, Arecibo, Barranquitas, Bayamón, Fajardo, Ponce and San German campuses are authorized to offer this Program. The Aguadilla Campus is authorized to offer the program through online education.

Competencies Profile of Graduates

The Associate of Applied Science in Computer Science is designed to develop the competences that will enable the student to:

Knowledge

Demonstrate knowledge of:

1. the fundamental concepts of computing.

2. the processes of the development of computer systems, including databases and computer networks.

Skills

1. Design and implement programs in high-level languages.

2. Apply computer skills, strategies and mathematical concepts to solve problems.

Attitudes

1. Value in the legal context ethical and moral behaviors proper to the profession.

Requirements for the Associate of Applied Science Degree in Computer Science

General Education Requirements	24 credits
Major Requirements	35 credits
Total	59 credits

General Education Requirements - 24 credits

GESP	Spanish - Select 6 credits from the GESP category	6
GEEN	English - Select 6 credits from the GEEN category	6
GEP-GECF 1010	Introduction to the Christian Faith	3
GEP-GEIC 1010	Information and Computing Technologies	3
GEP-GEMA 1200	Fundamentals of Algebra	3
GEP-GEHS 2010	Historical Process of Contemporary Puerto Rico Or	3
GEP-GEEC 2000	Entrepreneurial Culture	3

Major Requirements - 35 credits

COMP 2025	Development of Webpages	3
COMP 2120	Programming Logic	3
COMP 2315	Structured Programming	3
COMP 2400	Object Oriented Programming	3
COMP 2501	Discrete Computational Structures I	3
COMP 2800	Databases	3
COMP 2850	Movable Computation	3
COMP 2900	Data Structures	3
COMP 2970	Seminar and Practice	3
COMP 3015	Web Programming with Databases	3
MATH 1500	Precalculus	5

Computer Science (BS)

Computer Science (BS)

The Program offers a theoretical and practical preparation aimed to develop professionals focused on the mastery of knowledge related to the technical and diversified areas of the discipline. In addition, it facilitates the development of logical reasoning skills, of analysis for problem solving, programming methodologies and use of tools associated with the computation field.

The Aguadilla, Arecibo, Barranquitas, Bayamón, Fajardo,

Metropolitan, Ponce and San Germán campuses are authorized to offer this Program. The Aguadilla Campus is also authorized to offer this Program through online education. The Fajardo Campus is authorized to offer 50 percent of the courses online.

Competencies Profile of Graduates

The Bachelor of Science in Computer Science is designed to develop the competencies that will enable the student to:

Knowledge

Demonstrate knowledge of:

1. the fundamental concepts of computing.

2. the processes of the development of computer systems, including databases and computer networks.

Skills

1. Design and implement programs in high-level languages.

2. Apply computer skills, strategies and mathematical concepts to solve problems.

3. Apply methodologies, tools and techniques for the planning, design and implementation of projects in the areas of Computer Science.

Attitudes

1. Value in the legal context ethical and moral behaviors proper to the profession.

2. Appreciate the importance of computer systems development processes.

Requirements for the Bachelor of Science Degree in Computer Science

General Education Requirements	48 credits
Major Requirements	65 credits
Prescribed Distributive Requirements	6 credits
Elective Courses	3 credits
Total	122 credits

General Education Requirements - 48 credits

Forty-eight (48) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees." Students will take the course GEMA 1200 in the Basic Skills in Mathematics category.

Major Requirements - 65 credits

COMP 2025	Development of Webpages	3
COMP 2120	Programming Logic	3
COMP 2315	Structured Programming	3
COMP 2400	Object Oriented Programming	3
COMP 2501	Discrete Computational Structures I	3
COMP 2502	Discrete Computational Structures II	3
COMP 2800	Databases	3
COMP 2900	Data Structures	3
COMP 3015	Web Programming with Databases	3
COMP 3300	Organization and Computer Architecture	3
COMP 3400	Software Engineering	3
COMP 3500	Operating Systems	3
COMP 3900	Visual Computation	3
COMP 4200	Teleprocessing and Networks	3
COMP 4400	Design and Implementation of Systems	3
COMP 4410	Computational Security	3
COMP 4910	Practice and Professional Ethics	3
MATH 1500	Precalculus	5
MATH 2251	Calculus I	5
PHYS 3001	General Physics I	4

Prescribed Distributive Requirements - 6 credits

Six (6) credits from the following courses:

COMP 2850	Movable Computation	3
COMP 3600	Computer Graphics	3
COMP 3800	Programming Languages	3
COMP 397_	Special Topics	1 to 6
COMP 4160	Parallel Processing	3
COMP 4210	Computing in The Cloud	3
COMP 4415	Forensic Computation	3
COMP 4480	Artificial Intelligence	3
COMP 4580	Introduction to Robotics	3
MATH 2100	Introduction to Probability and Statistics	3

Minor in Computer Science

The Minor in Computer Science is designed to provide students of any discipline knowledge of the theoretical bases of some areas within computer science, with emphasis on the application of algorithms and programming languages, in the development of problem solving.

All campuses that offer the Computer Science Program are authorized to offer this minor.

Requirements for the Minor in Computer Science - 18 credits

Courses for the Minor in Computer Science

COMP 2025	Development of Webpages	3
COMP 2120	Programming Logic	3
COMP 2315	Structured Programming	3
COMP 2800	Databases	3
COMP 2850	Movable Computation	3
COMP 3015	Web Programming with Databases	3

Minor in Computer Networks

The Minor in Computer Networks allows students of the Bachelor of Sciences in Computer Science to expand their knowledge and skills in the area of computer science networks.

This minor may only be taken by students of the Bachelor of Science degree in Computer Science.

The Aguadilla, Arecibo, Barranquitas, Bayamón, Fajardo, Metropolitan, Ponce and San German campuses are authorized to offer this minor.

Requirements for the Minor in Computer Networks - 18 credits

Courses for the Minor in Computer Networks

COMP 397_	Special Topics	1 to 6
COMP 4210	Computing in The Cloud	3
COMP 4220	Advanced Teleprocessing and Networks	3
COMP 4230	Installation and Configuration of Physical Components for Networks	3
COMP 4235	Operating Systems for Networks	3
COMP 4240	Network Management	3

Minor in of Mobile Device Programming

The Minor in Mobile Device Programming is designed to provide students of the Bachelor of Science Degree in Computer Sciences with the opportunity to extend their knowledge and skills in the theoretical bases of programming of mobiles, with emphasis in a development platform.

The Metropolitan Campus is authorized to offer this minor.

Requirements for the Minor in Mobile Device Programming - 21 credits

Courses for the Minor in Mobile Device Programming

MOPR 1000	Introduction to the technology, development and design of Mobile devices	3
MOPR 2970	Seminar in Programming of Mobile devices	3
COMP 2120	Programming Logic	3
COMP 2315	Structured Programming	3
SBAD 2110	Introduction to Small Business Administration	3
MOPR 1201	Development of mobile applications Android 1	3
MOPR 1202	Development of mobile applications Android 2 Or	3
MOPR 2001	Development of mobile applications Apple 1 iOS	3
MOPR 2002	Development of mobile applications Apple 2 iOS Or	3
MOPR 2101	Development of mobile applications of Windows Phone 1	3
MOPR 2102	Development of mobile applications Windows Phone 2	3

Computer Technology and Networks (AAS)

The Associate Degree Program in Applied Sciences in Computer Technology and Networks curriculum integrates knowledge, theories, techniques and practices in the field of network administration with current and emerging technologies. This Program allows the students to acquire a technical capacity according to their interests and aptitudes in a changing society.

The students must pass the courses required in the major with the minimum grade of C.

The Aguadilla, Bayamón, Fajardo, and Guayama campuses are authorized to offer this Program.

Competencies Profile of Graduates

The Program is designed to develop the competences that allow students to demonstrate:

Knowledge

1. Know the technical vocabulary, organization, architecture, operation and limitations of network systems.

2. Know the fundamental principles of theory and technique in the field of network systems to recognize and solve real situations at work.

3. Know the equipment and network programs of high acceptance in the market.

4. Know the skills of self-learning so that they can continue their professional development in the areas of administration, installation and repair of systems and networks.

5. Know the process for the solution of typical problems in the repair, maintenance, installation of systems and networks and their operation in general.

Skills

1. Apply techniques for recognizing system and network problems.

2. Integrate the planning, design, organization, implementation and administration of networks.

3. Analyze changes in network technology and its application in the business environment.

4. Demonstrate self-learning skills for professional development in systems and networks.

5. Demonstrate the ability to work as a team in real situations in the field of systems and networks.

6. Critically analyze and solve problems of network installation and repair of computerized systems.

Attitudes

1. Express appreciation of the importance of staying updated on systems and networks technology.

2. Show interest in communicating adequately in the vernacular language and in bilingual environments.

3. State the importance of applying ethical principles in the access, use and management of systems and networks.

4. Demonstrate an attitude of commitment to the community by contributing with the knowledge and skills acquired in the field of systems and networks.

Requirements for the Associate of Applied Science Degree in Computer Technology and Networks

General Education Requirements	24 credits
Major Requirements	41 credits
Total	65 credits

General Education Requirements - 24 credits

GESP	Spanish - Select 6 credits from the GESP category	6
GEEN	English - Select 6 credits from the GEEN category	6
GEP-GECF 1010	Introduction to the Christian Faith	3
GEP-GEIC 1010	Information and Computing Technologies	3
GEP-GEMA 1200	Fundamentals of Algebra	3
GEP-GEHS 2010	Historical Process of Contemporary Puerto Rico Or	3
GEP-GEEC 2000	Entrepreneurial Culture	3

Major Requirements - 41 credits

COTN 1120	Computer Program Design	3
COTN 1131	Electronics I	3
COTN 1210	Computer Mathematics	3
COTN 1220	Data Communication	3
COTN 1230	Microcomputer Operating Systems	3
COTN 2121	Network Administration I	3
COTN 2122	Network Administration II	3
COTN 2132	Electronics II	3
COTN 2150	Implementation of Network Applications	3
COTN 2160	Network Installation and Configuration of Routers and Switches	2
COTN 2210	Diagnostics and Maintenance of Computerized Systems	3
COTN 2230	Network Diagnosis, Service and Maintenance	3
COTN 2910	Practicum	2
BADM 1550	Business Management and Organization (For Associate Degree Candidates) Or	3
BADM 1900	Fundamentals of Business Management	3

Computer Technology and Networks (BS)

Computer Technology and Networks (BS)

The Bachelor of Science Degree in Computer Technology and Networks contains a modern curriculum that adapts to the knowledge, theories, techniques and practices in the field of Networks Administration. This Program allows the student to acquire a detailed knowledge of the organization, architecture, operation and limitations of network systems. In addition, it develops in students a professional competence according to their interests and aptitudes in a changing society.

Students must pass the required courses in the major with a minimum grade of C.

The Aguadilla, Bayamón, Fajardo and Guayama campuses are authorized to offer this Program.

Competencies Profile of Graduates

The Program is designed to develop the competences that allow the student to:

Knowledge

1. Know the technical vocabulary, organization, architecture, operation and limitations of network systems.

2. Know the fundamental principles of theory and technique in the field of network systems to recognize and solve real situations at work.

3. Know the equipment and network programs of high acceptance in the market.

4. Know the fundamental principles and application techniques in network security.

5. Know the process for the solution of typical problems in the repair, maintenance, installation of systems and networks and their operation in general.

Skills

1. Apply techniques for recognizing system and network problems.

2. Integrate the planning, design, organization, implementation and administration of networks.

3. Analyze changes in network technology and its application in the business environment.

4. Demonstrate self-learning skills for professional development in systems and networks.

5. Demonstrate the ability to work as a team in real situations in the field of systems and networks.

6. Critically analyze and solve problems of network installation and repair of computerized systems.

7. Apply the principles of research in the process of analyzing systems and networks.

Attitudes

1. Express appreciation of the importance of keeping up to date on systems and networks technology.

2. Show interest in communicating adequately in the vernacular language and in bilingual environments.

3. State the importance of applying ethical principles in the access, use and management of systems and networks.

4. Demonstrate an attitude of commitment to the community by contributing the knowledge and skills acquired in the field of systems and networks.

5. Know the skills of self-learning so that you can continue your professional development in the areas of administration, installation and repair of systems and networks.

Requirements for the Bachelor of Science Degree in Computer Technology and Networks

General Education Requirements	48 credits
Major Requirements	66 credits
Elective Courses	6 credits
Total	120 credits

General Education Requirements - 48 credits

Forty-eight (48) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees." Students in this Program will take GEMA 1200 in the Basic Mathematical Skills category.

Major Requirements - 64 credits

COTN 1120	Computer Program Design	3
COTN 1131	Electronics I	3
COTN 1210	Computer Mathematics	3
COTN 1220	Data Communication	3

COTN 1230	Microcomputer Operating Systems	3
COTN 2121	Network Administration I	3
COTN 2122	Network Administration II	3
COTN 2132	Electronics II	3
COTN 2150	Implementation of Network Applications	3
COTN 2160	Network Installation and Configuration of Routers and Switches	2
COTN 2210	Diagnostics and Maintenance of Computerized Systems	3
COTN 2220	Design and Implementation of Web Applications	3
COTN 2230	Network Diagnosis, Service and Maintenance	3
COTN 3300	Architecture of Computerized Systems	3
COTN 3310	Database Analysis and Design	3
COTN 3315	Analysis and Design of Computerized Systems	3
COTN 3971	Emerging Topics in Network Technology	3
COTN 4150	Network Security	3
COTN 4200	Cryptography	3
COTN 4300	Information Systems Management	3
COTN 4910	Practicum	3
BADM 1550	Business Management and Organization (For Associate Degree Candidates) Or	3
BADM 1900	Fundamentals of Business Management	3

Minor in Computer Network Technology

The Aguadilla, Bayamón and Fajardo campuses are authorized to offer this minor.

Requirements for the Minor in Computer Network Technology - 18 credits

Courses for the Minor in Computer Network Technology

COTN 1220	Data Communication	3
COTN 2121	Network Administration I	3
COTN 2122	Network Administration II	3
COTN 2150	Implementation of Network Applications	3
COTN 2160	Network Installation and Configuration of Routers and	2

	Switches	
COTN 2230	Network Diagnosis, Service and Maintenance	3

Note: The course COTN 1220 Data Communication can be replaced by ADEV 2500 Introduction to Cloud Network Management or by COMP 4200 Teleprocessing and Networks.

Minor in Network Security

This minor is exclusive for students of the Bachelor of Science in Computer Technology and Networks.

The Aguadilla Campus is authorized to offer this minor.

Requirements for the Minor in Network Security - 18 credits

Courses for the Minor in Computer Network Technology

COTN 3400	Introduction to Cyber Security	3
COTN 3415	Network Policies and Disaster Recovery	3
COTN 3515	Risk Management	3
COTN 4160	Introduction to Vulnerability Testing	3
COTN 4240	Network Defense	3
COTN 4250	Network Intrusion Detection	3

Computerized Management Information Systems (AAS)

The Associate of Applied Science Degree in Computerized Management Information Systems aims to prepare students for working with information systems in companies and giving them an understanding of the goals, functions and operations of business organizations as well as making them knowledgeable of information needs and the role of information systems in these organizations. In addition, it provides for the development of analytical and technical skills to identify, to study and to solve information management problems. Importance is given to communication skills that permit an effective interaction with other members of a business organization and especially with the users and those that install or implement computerized management information systems.

The Barranquitas Campus is authorized to offer this Program in campus and through online education.

Competencies Profile of Graduates

This Program is designed to develop the competencies that

permit students to:

Knowledge

Demonstrate knowledge and understanding of:

1. the foundations and trends in the field of information technology.

2. the legal implications for the implementation and use of information technologies.

3. the trends in programming languages, databanks, and communications networks.

Skills

1. Program applications using computer languages.

2. Analyze the requirements for the implantation of computer networks in harmony with the needs of the company.

3. Apply analytical techniques that will permit decision making in a rational and efficient way.

4. Develop projects based on the system development of information cycle and on the use of new technologies.

5. Design databanks that will permit the development of business applications.

Attitudes

1. Demonstrate the attitude and positive characteristics of a professional with leadership.

2. Demonstrate the capacity to perform collaborative work.

Requirements for the Associate of Applied Science Degree in Computerized Management Information Systems

General Education Requirements	24 credits	
Core Course Requirements	16 credits	
Major Requirements	21 credits	
Elective Courses	3 credits	
Total	64 credits	

General Education Requirements - 24 credits

GESP	Spanish - Select 6 credits from the GESP category	6
GEEN	English - Select 6 credits from the GEEN category	6

GEP-GECF 1010	Introduction to the Christian Faith	3
GEP-GEIC 1010	Information and Computing Technologies	3
GEP-GEMA 1200	Fundamentals of Algebra	3
GEP-GEHS 2010	Historical Process of Contemporary Puerto Rico Or	3
GEP-GEEC 2000	Entrepreneurial Culture	3

Core Course Requirements - 16 credits

ACCT 1161	Introduction to Financial Accounting	4
BADM 1900	Fundamentals of Business Management	3
MAEC 2221	Basic Statistics	3
MAEC 2211	Principles of Microeconomics	3
MKTG 1210	Introduction to Marketing	3

Major Requirements - 21 credits

ITEC 1100	Introduction to Information Technology	3
ITEC 1200	Programming Algorithms	3
ITEC 2310	Visual Programming in Information Systems	3
ITEC 2450	Development of Web Page	3
ITEC 3130	Database Design and Management	3
ITEC 3350	Telecommunications and Business Networks	3
ITEC 3420	Information System Analysis and Design	3

Corporate Communication (BA)

The Bachelor of Arts program in Corporate Communication is designed to provide students with the skills and the general knowledge on the corporate communication necessary to advance in the different areas of communications. It aspires to prepare specialists able to respond to the social and economic challenges of this field.

The curriculum connects students to the design, structure, management, and analysis of the strategies of communication within the internal and external corporate context. Likewise, it aspires to strengthen corporate strategic thinking in the light of the integrated communications of marketing. The program aspires to fortify the oral and written skills necessary for corporate communication. Theory may be supplemented with an academic-professional internship abroad, and it is required

that the corresponding proceedings be conducted through the Office of International Relations of the Campus, with the approval of the department director.

The Metropolitan Campus is authorized to offer this program.

Competencies Profile of Graduates

The program is designed to permit the development of the following competencies:

Knowledge

To demonstrate knowledge and understanding of:

1. the basic concepts of corporate communication.

2. the integration of the data and information with the aim of performing different communicative strategies.

Skills

1. To prepare annual plans of image and communication, reputation, culture, social responsibility, brand, publicity at the strategic and operational level.

2. To coordinate the communication of all the levels of direction of the organization with respect to political decisions, rules of action and communication, with vision of the possible social and sectorial impacts.

3. To develop research projects of communication with theoretical, methodologic and technical strength.

Attitudes

1. To respect the ethical aspects of the profession.

2. To value the utility of the programs of action and communication directed to the different strategic communities.

3. To recognize the importance of the oral and written skills in enterprise communication.

Requirements for the Bachelor of Arts Degree in Corporate Communication

General Education Requirements	48 credits
Major Requirements	63 credits
Prescribed Distributive Requirements	3 credits
Elective Courses	6 credits
Total	120 credits

General Education Requirements - 48 credits

Forty-eight (48) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees."

Major Requirements - 63 credits

COMU 1000	Introduction to Communications	3
COMU 2001	Corporate Communication	3
COMU 2002	Administration of Corporate Communication	3
COMU 2003	Trends in Communication Technology	3
COMU 2030	Foundations of Public Relations	3
COMU 2031	Foundations of Advertising	3
COMU 3001	Strategic Planning	3
COMU 3013	Public Relations Plan	3
BADM 1900	Fundamentals of Business Management	3
ENTR 2200	Foundations of Entrepreneurship	3
INTB 2200	Cultural Awareness in International Business	3
MKTG 1210	Introduction to Marketing	3
COMU 2000	Fundamentals of Journalism	3
COMU 2010	Writing for Mass Media	3
COMU 2197	Creative Project	3
COMU 2250	Foundations in Social Media Administration	3
COMU 3002	Psychology of Communication	3
COMU 3015	Advertising Projects	3
COMU 3021	Production for Multimedia	3
COMU 3025	Integral Communication of Brand Names	3
COMU 3970	Current Topics in Communications	3

Prescribed Distributive Requirements - 3 credits

The student will take 6 credits from the following courses to complete the credits of the component of prescribed distributive requirements. The course COMU 4494 will be

taken outside Puerto Rico.

| COMU 4493 | Professional Practice | 3 |
| COMU 4494 | Academic Internship | 3 |

Criminal Investigation (AA)

The Associate of Arts Degree in Criminal Investigation contains a curriculum that prepares students with the essential elements in criminal research and at the same time prepares them to continue studies in the Bachelor's Degree in Criminal Justice.

The Program emphasizes the essential components of criminal investigation, as well as the operation of the agencies that are in charge of seeing to it that the law is upheld. Students will learn the essential elements of criminal investigation, the constitutional guarantees that protect the defendant, as well as the theories and general foundations related to the criminality and the system of penal justice.

The Ponce Campus are authorized to offer this Program in campus in face-to-face modality.

Competencies Profile of Graduates

The Associate of Arts Degree Program in Criminal Investigation is designed to achieve the development of professionals with the following competencies:

Knowledge

1. Explain the theories on crime and the criminality.

2. Describe general terms related to the laws and procedures in the penal environment.

Skills

1. Use essential skills in the intervention with those that disobey the law.

2. Make proper use of the principles of criminal investigation.

Attitudes

1. Value the ethical principles that apply to the area of criminal investigation.

Admission Requirements

1. Meet the admission norms established in the General Catalog of Inter American University of Puerto Rico.

2. Submit a Negative Certificate of Criminal Records.

Graduation Requirements

1. Have a minimum grade point index of 2.25.

2. Pass all major courses with a minimum grade of C.

Requirements for the Associate of Arts Degree in Criminal Investigation

General Education Requirements	24 credits	
Major Requirements	36 credits	
Total	60 credits	

General Education Requirements - 24 credits

GESP	Spanish - Select 6 credits from the GESP category	6
GEEN	English - Select 6 credits from the GEEN category	6
GEP-GECF 1010	Introduction to the Christian Faith	3
GEP-GEIC 1010	Information and Computing Technologies	3
GEP-GEMA 1000	Quantitative Reasoning	3
GEP-GEHS 2010	Historical Process of Contemporary Puerto Rico Or	3
GEP-GEEC 2000	Entrepreneurial Culture	3

Major Requirements - 36 credits

CJUS 1000	Introduction to Criminology	3
CJUS 2070	Human and Civil Rights	3
CJUS 2090	Juvenile Justice System	3
CJUS 2260	Foundations of Criminal Investigation	3
CJUS 3025	Criminal Law	3
CJUS 3027	White Collar Crime	3
CJUS 3030	Interviews and Interrogations	3
CJUS 3035	Special Criminal Laws	3
CJUS 3250	Criminal Investigation	3
SOCI 1030	Introduction to Sociology	3
SOCI 2080	Criminal Justice System	3
PSYC 1051	General Psychology I	3

Criminal Justice (AA)

The Associate of Arts Degree in Criminal Justice aims to prepare students for a career in criminal justice by equipping them with the information necessary to continue studies towards the Bachelor degree. The curriculum includes criminal investigation, penal law, organization and penal system management constitutional law, criminal

evidence, delinquent behavior and administration of justice.

The Aguadilla, Arecibo, Barranquitas and Fajardo campuses are authorized to offer this Program. The Barranquitas campus is also authorized to offer this Program through online education.

Program Goals

1. Develop professionals focused on the mastery of knowledge framed in the skills required in the Criminal Justice discipline.

2. Promote the understanding of the factors that affect the criminal phenomenon.

3. Promote research and technology as ways to improve the prevention and intervention practices that are carried out in the Criminal Justice System.

4. Develop the knowledge and skills to identify and solve problems and decision-making in the area of Criminal Justice.

5. Develop commitment with the ethical-legal dimension of the professions related to the field of Criminal Justice.

Program Objectives

1. Demonstrate theoretical, social, psychological and legal knowledge related to the o Criminal Justice System, adjusted to the changes and new trends in the profession.

2. Analyze factors that affect the criminal phenomenon from a criminological and legal perspective.

3. Use research and the technological advances for the production and construction of knowledge in the areas that make up the field of Criminal Justice.

4. Apply the knowledge and skills of the discipline in the identification and solution of problems and decision making related to the area of Criminal Justice.

5. Integrate the values and ethical-legal principles related to the field of Criminal Justice to the professional formation.

Competencies Profile of Graduates

This Program is designed to develop the competencies that will enable students to:

Knowledge

1. Know the human and civil rights, and their legal and social implications in the context of the Criminal Justice System.

Skills

1. Analyze the legal, state and federal, political, psychological, sociological, and economic theories and principles that underpin the profession, as well as the structure and operation of the Criminal Justice System.

2. Apply criminological theories and legal principles to the comprehensive study of the factors that incise the criminal phenomenon.

3. Integrate the criminological factors that influence criminal behavior.

4. Apply scientific methodology and technological resources to the development of criminal or forensic investigation.

5. Apply rules, procedures, methods and strategies in the solution.

Attitudes

1. Recognize the importance of the ethical-legal values in the field of Criminal Justice.

Graduates of this Program can work as officers of correctional institutions, customs inspectors, private investigators, and as State and Municipal police officers.

Some practice centers may require a certificate of no criminal record.

Graduation Requirements

1. Pass, with a minimum grade of C, all courses that are a part of:

    a. Core Course Requirements

    b. Major Requirements

Requirements for the Associate of Arts Degree in Criminal Justice

General Education Requirements	24 credits
Core Course Requirements	24 credits
Major Requirements	15 credits
Total	63 credits

General Education Requirements - 24 credits

GESP	Spanish - Select 6 credits from the GESP category	6
GEEN	English - Select 6 credits from the GEEN category	6
GEP-GEMA 1000	Quantitative Reasoning	3
GEP-GECF 1010	Introduction to the Christian Faith	3
GEP-GEIC 1010	Information and Computing Technologies	3
GEP-GEHS 2010	Historical Process of Contemporary Puerto Rico Or	3
GEP-GEEC 2000	Entrepreneurial Culture	3

Core Course Requirements - 24 credits

CJUS 1000	Introduction to Criminology	3
CJUS 2050	Victims of Crime	3
CJUS 2090	Juvenile Justice System	3
CJUS 3025	Criminal Law	3
POLS 1011	Introduction to Political Science	3
PSYC 1051	General Psychology I	3
SOCI 1030	Introduction to Sociology	3
SOCI 2080	Criminal Justice System	3

Major Requirements - 15 credits

CJUS 2070	Human and Civil Rights	3
CJUS 3030	Interviews and Interrogations	3
CJUS 3035	Special Criminal Laws	3
CJUS 3250	Criminal Investigation	3
CJUS 4040	Evidence Management	3

Criminal Justice (BA)

Criminal Justice (BA)

The Bachelor of Arts Degree in Criminal Justice offers three majors: Criminal Investigation, Forensic Investigation and Cyber Crimes Research. The Program's modern curriculum adjusts the knowledge, theory and techniques of the field of Criminal Justice to the demands of a dynamic and changing society. The curriculum is inter-disciplinary with branches of knowledge related to human behavior. The Program permits students to acquire personal and professional skills in accord with their interests and aptitudes. It also stresses the importance of the adequate development of attitudes and characteristics of the student's personality while emphasizing knowledge of the causes and spread of crime, the methods and modern techniques of criminal justice.

The Program aims to: a) prepare the student to occupy positions at the operational level in the field of the criminal justice system, both in the private and public sector, b) upgrade the preparation of personnel offering services in these areas, c) stimulate students to pursue graduate studies.

The campuses authorized to offer the majors of this Program are:

1. Criminal Investigation: Aguadilla, Arecibo, Barranquitas, Fajardo, Guayama, Metropolitan, Metropolitan Campus' University Center in Caguas, Ponce, and San Germán
   Criminal Investigation through online education: Aguadilla, Barranquitas, Ponce

2. Forensic Investigation: Aguadilla, Arecibo, Barranquitas, Bayamón, Fajardo, Ponce, and Metropolitan Campus' University Center in Caguas. Forensic Investigation through online education: Aguadilla and Barranquitas.

3. Cyber Crime Research: Fajardo

Program Goals

1. Develop professionals focused on the mastery of knowledge framed in the skills required in the Criminal Justice discipline.

2. Promote the understanding of the factors that affect the criminal phenomenon.

3. Promote research and technology as ways to improve the prevention and intervention practices that are carried out in the Criminal Justice System.

4. Develop the knowledge and skills to identify and solve problems and decision-making in the area of Criminal Justice.

5. Develop commitment with the ethical-legal dimension of the professions related to the field of Criminal Justice.

Program Objectives

1. Demonstrate theoretical, social, psychological and legal knowledge related to the o Criminal Justice System, adjusted to the changes and new trends in the profession.

2. Analyze the factors that affect the criminal phenomenon from a criminological and legal perspective.

3. Use research and the technological advances for the production and construction of knowledge in the areas that make up the field of Criminal Justice.

4. Apply the knowledge and skills of the discipline in the identification and solution of problems and decision making related to the area of Criminal Justice.

5. Integrate the values and ethical-legal principles related to the field of Criminal Justice to the professional formation.

Competencies Profile of Graduates

This Program is designed to develop the competencies that will enable students to:

Knowledge

Demonstrate the comprehension and knowledge of:

1. the human and civil rights, and their legal and social implications in the context of the Criminal Justice System.

2. the use of statistics applied to the field of social sciences.

3. the methodology and the technological resources that serve as support to social-scientific research.

Skills

1. Apply the criminological theories and the legal principles to the comprehensive study of the factors that influence the criminal phenomenon.

2. Apply the scientific methodology and the technological resources to the development of criminal, forensic and cyber crime research.

3. Apply rules, procedures, methods and strategies in problem solving in scenarios related to the Criminal Justice System.

4. Analyze the theories and state and federal legal, political, psychological, sociological and economic principles that underpin the profession, as well as the structure and operation of the Criminal Justice System.

Attitudes

1. Recognize the importance of the ethical-legal values to the field of Criminal Justice.

Practice Requirements

The Practice course in Criminal Investigation or Forensic Investigation is an option within the Prescribed Distributive Requirements. However, the student who decides to take this course must do the practice in Puerto Rico. The availability of the course will depend on the practice centers available to receive students.

The practice may be substituted by an investigation project in the criminal investigation or forensic investigation areas. In the cases where the student has documented experience in the field of criminal justice, the substitution will be subject to the following:

1. The student must have worked full-time for a period of two (2) years within the five (5) years immediately prior to the application date.

2. The experience that is going to be confirmed is related to the practice in the area of the student's major and to the criteria established by the University to approve this practice.

Students who are candidates for the Practice must meet the requirements established by the University for this Program. These are listed below:

1. Internship application

2. No Criminal Record Certificate

3. Health Certificate

4. Release from responsibility

5. Official transcript of credits

6. Official evaluation of the Registrar

7. Three letters of recommendation

8. Four pictures 2X2

9. Present a certification from the department to the Registrar

In addition, students must meet the requirements stipulated by the practice center.

Graduation Requirements

1. Pass, with a minimum grade of C, all the courses that are a part of:

   a. Core Course Requirements,

   b. Major Requirements and

   c. Prescribed Distributive Requirements

Requirements for the Bachelor of Arts Degree in Criminal Justice

General Education Requirements	48 credits
Core Course Requirements	40 credits
Prescribed Distributive Requirements	6 credits
Major Requirements	21 credits
Elective Courses	6 credits
Total	121 credits

General Education Requirements - 48 credits

Forty-eight (48) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees." In addition to the course GEHS 2010, students of this Program will select one course, from the following alternatives in the Historic and Social Context category: 4020 or 4030.

Core Course Requirements - 40 credits

CJUS 1000	Introduction to Criminology	3
CJUS 2050	Victims of Crime	3
CJUS 2090	Juvenile Justice System	3
CJUS 3025	Criminal Law	3
CJUS 3027	White Collar Crime	3
CJUS 3055	Federal Jurisdiction	3
CJUS 4500	Social-Scientific Research Methodology	4
CJUS 4972	Seminar in Criminal Justice	3
POLS 1011	Introduction to Political Science	3
PSYC 1051	General Psychology I	3
PSYC 3001	Statistical Methods I	3
SOCI 1030	Introduction to Sociology	3
SOCI 2080	Criminal Justice System	3

Prescribed Distributive Requirements - 6 credits from the following courses:

CJUS 1010	Police and Community	3
CJUS 2010	Criminal Procedures in Justice Systems	3
CJUS 2075	Social Deviation	3
CJUS 2080	Criminal Law, Science, And Environment	3
CJUS 2095	Ethics in Processes of Prevention and Police Intervention	3
CJUS 3015	Women Faced with Crime	3
CJUS 3085	Criminal Law and Immigration	3
CJUS 3260	Money Laundering	3
CJUS 3300	Alternate Methods in The Resolution of Conflicts	3
CJUS 4020	Alcoholism and Drug Addiction	3
CJUS 4035	Modern Technology in Criminal Investigation	3
CJUS 4914	Practice in Criminal Investigation Or	3
CJUS 4915	Practice in Forensic Investigation	3
PSYC 4213	Psychopathology	3
PSYC 4520	Crisis Intervention	3
SOCI 3753	Social Problems of Puerto Rico	3

Major Requirements - 21 credits

Criminal Investigation, Forensic Investigation and Cyber Crimes Research.

Major Requirements for Criminal Investigation - 21 credits

Courses for the major Criminal Investigation

CJUS 2070	Human and Civil Rights	3
CJUS 3030	Interviews and Interrogations	3
CJUS 3035	Special Criminal Laws	3
CJUS 3250	Criminal Investigation	3
CJUS 397_	Special Topics	3
CJUS 4040	Evidence Management	3
CJUS 4060	Fraud Detection and Management	3

Major Requirements for Cyber Crime Investigation - 21 credits

The major in Cyber Crime Investigation contemplates the study of the commission of passive crime through the use

of technology. The student will also be trained in the identification of cybercrime, the collection of evidence and the presentation of written reports and testimony to the relevant investigative scenarios.

Courses for the major Cyber Crime Investigation

CYBE 3033	Cyber Crimes I	3
CJUS 2070	Human and Civil Rights	3
CJUS 3030	Interviews and Interrogations	3
CJUS 3055	Federal Jurisdiction	3
CJUS 397_	Special Topics	3
CYBE 4150	Cyber Crimes II	3
CYBE 4522	Cyber Crimes III	3

Major Requirements for Forensic Investigation - 21 credits

Courses for the major Forensic Investigation

CJUS 2070	Human and Civil Rights	3
CJUS 2205	Oral and Written Communication for Forensic Investigation	3
CJUS 3035	Special Criminal Laws	3
CJUS 3241	Forensic Investigation I	3
CJUS 3242	Forensic Investigation II	3
CJUS 397_	Special Topics	3
CJUS 4014	Analysis of Data for Forensic Investigation	3

Minor in Criminal Investigation

This minor is for students of majors other than Criminal Justice.

The Aguadilla, Arecibo, Barranquitas, Bayamón, Fajardo, Guayama, Metropolitan and Ponce campuses are authorized to offer this Minor. The Aguadilla and Ponce campuses are authorized to offer this minor through online education.

Requirements for the Minor in Criminal Investigation - 18 credits

Courses for the Minor in Criminal Investigation

CJUS 2070	Human and Civil Rights	3
CJUS 3025	Criminal Law	3
CJUS 3027	White Collar Crime Or	3
CJUS 2090	Juvenile Justice System	3
CJUS 3030	Interviews and Interrogations	3
CJUS 3250	Criminal Investigation	3
SOCI 2080	Criminal Justice System	3

Minor in Cybercrimes

The Minor in Cybercrimes contemplates the study of the commission of passive crime through the use of technology. At the same time, it trains the student in the identification of cybercrime, the collection of evidence, the presentation of written reports and the testimony to the pertinent investigative scenarios.

The Aguadilla and Fajardo campuses are authorized to offer this minor.

Requirements for the Minor in Cybercrimes

Courses for the Minor in Cybercrimes

CYBE 3033	Cyber Crimes I	3
CYBE 4150	Cyber Crimes II	3
CYBE 4522	Cyber Crimes III	3
CJUS 2070	Human and Civil Rights	3
CJUS 3030	Interviews and Interrogations	3
CJUS 3250	Criminal Investigation	3

Minor in Cybercrimes Investigation

The minor in Cybercrime Investigation provides students with the knowledge and skills required to perform in the field of Cybercrime Investigation.

The Fajardo Campus is authorized to offer this minor.

Requirements for the Minor Cybercrimes Investigation - 21 credits

Courses for the Minor in Cybercrimes Investigation

CYBE 3033	Cyber Crimes I	3
CYBE 4150	Cyber Crimes II	3
CYBE 4522	Cyber Crimes III	3
CJUS 2070	Human and Civil Rights	3
CJUS 3030	Interviews and Interrogations	3
CJUS 3055	Federal Jurisdiction	3
CJUS 397_	Special Topics	3

Minor in Forensic Investigation

The Aguadilla, Arecibo, Bayamón, and Ponce campuses are authorized to offer this Minor.

Requirements for the Minor in Forensic Investigation - 18 credits

Courses for the Minor in Forensic Investigation

CJUS 1000	Introduction to Criminology	3
CJUS 2010	Criminal Procedures in Justice	3

	Systems	
CJUS 2205	Oral and Written Communication for Forensic Investigation	3
CJUS 3241	Forensic Investigation I	3
CJUS 3242	Forensic Investigation II	3
CJUS 4014	Analysis of Data for Forensic Investigation	3

Minor in Penology

This minor is available for students of Criminal Justice and other majors.

The Aguadilla, Arecibo, Barranquitas, Fajardo, Guayama, and Ponce campuses are authorized to offer this Minor.

Requirements for the Minor in Penology - 18 credits

Courses for the Minor in Penology

CJUS 1000	Introduction to Criminology	3
	Or	
CJUS 2070	Human and Civil Rights	3
CJUS 3025	Criminal Law	3
CJUS 3040	Penology	3
CJUS 3045	Rights of The Correctional Population	3
CJUS 3060	Correctional Administration	3
SOCI 2080	Criminal Justice System	3

Criminology (BSS)

Criminology (BSS)

The Program leading to the Bachelor of Social Science degree with a major in Criminology is designed to develop professional that can offer services in communities, private organizations and governmental agencies. This knowledge is based on sociological, psychological, philosophical and criminological concepts and principles.

This Program aspires to prepare graduates capable of performing in social control agencies such as: correctional systems, public and private security, among others. The main component of this Bachelor's Program is aimed at scientific social research to find solutions to criminality.

The Ponce Campus is authorized to offer this Program through online education.

Competencies Profile of Graduates

The Program is designed to develop the competencies that

will enable students to:

Knowledge

To demonstrate knowledge and understanding of:

1. the historical, theoretical and scientific development of criminology.

2. the distinction between deviated, antisocial and criminal conduct.

3. the philosophical and theoretical bases of social-scientific, criminological research.

Skills

1. Integrate the psychological, sociological and philosophical theories to study of the criminal.

2. Use the technological, research and social-scientific tools in criminological work.

3. Develop strategies of prevention, intervention and treatment of the criminal.

4. Identify psycho-social factors related to the antisocial, deviated and criminal behaviors.

Attitudes

1. Exhibit a high ethical degree and responsibility and commitment with the profession.

2. Recognize the continuous learning as determining factor for criminological work.

3. Show esteem towards the institutions involved in the prevention, intervention and criminal treatment.

Graduation Requirements

1. Have a minimum general average of 2.50

2. Approve with a minimum grade of C the following GEP courses:

   a. GESP 1101 and 1102

   b. GEEN 1101 and 1102 or 1201 and 1202 or 2311 and 2312

   c. GEMA 1000

3. Approve with minimum grade of C all the courses that form part of:

   a. Core course Requirements

b. Major Requirements

Requirements for the Bachelor of Social Science Degree with a Major in Criminology

General Education Requirements	48 credits
Core Course Requirements	31 credits
Major Requirements	40 credits
Elective Courses	3 credits
Total	122 credits

General Education Requirements - 48 credits

Forty-eight (48) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees."

Core Course Requirements - 31 credits

CJUS 1000	Introduction to Criminology	3
CJUS 3027	White Collar Crime	3
SOCI 1030	Introduction to Sociology	3
SOCI 4600	Human Rights and Society	3
POLS 1011	Introduction to Political Science	3
PSYC 1051	General Psychology I	3
PSYC 1052	General Psychology II	3
PSYC 2010	Developmental Psychology	4
PSYC 3300	Social Psychology	3
PSYC 4213	Psychopathology	3

Major Requirements - 40 credits

CRIM 2010	Sociology of Law	3
CRIM 2020	Victimology	3
CRIM 2100	Penology and Society	3
CRIM 2200	Language, Society and Criminality	3
CRIM 3000	Informatics and Criminality	3
CRIM 3014	The Media and Crime	3
CRIM 3020	Statistical Methods Applied to Criminology	3
CRIM 3021	Diversity and Criminality	3
CRIM 3500	Philosophy of Criminological Knowledge	3
CRIM 4015	Criminological Social Research	3
CRIM 4020	Terrorism and Society	3
CRIM 4030	Contemporary Social Problems	3
CRIM 4970	Contemporary Theoretical Debates in Criminology	3

Minor in Criminology

The Minor in Criminology is aimed especially at students of programs in the areas of arts, humanities, social and behavioral sciences. The courses emphasize the application of skills to develop adequate and effective intervention or prevention alternatives against crime. That is why the minor groups together a diversity of knowledge that is of interest and utility for students, social control agencies and society.

The Ponce Campus is authorized to offer this minor through online education.

Requirements for the Minor in Criminology - 18 credits

Courses for the Minor in Criminology

CRIM 2010	Sociology of Law	3
CRIM 2020	Victimology	3
CRIM 3000	Informatics and Criminality	3
CRIM 3014	The Media and Crime	3
CRIM 3021	Diversity and Criminality	3
CRIM 4020	Terrorism and Society	3

Culinary and Gastronomic Sciences (AA)

The Associate of Arts Degree in Culinary Arts and Gastronomic Sciences is designed to offer students the knowledge and technical skills necessary for culinary development at the local level as well as the global level. The academic and applied activities provide students with the necessary competencies for the selection, handling and conversion of raw materials, the identification of flavor profiles and the operations in gastronomic industry, generally. The program is designed on the basis of the foundations and theories of the gastronomy sciences and the viable enterprise practices with a robust practice component in kitchen laboratories.

The Barranquitas Campus is authorized to offer this Program.

Competencies Profile of Graduates

The Associate of Arts Degree in Culinary and Gastronomic Sciences Program, is designed to develop the competencies that will enable students to:

Knowledge

To know and to understand:

1. the theoretical and practical foundations of the culinary and gastronomical sciences within the discipline.

2. the process of selection and correct use of the tools and equipment commonly used in food elaboration

related to the field of gastronomy.

3. the essential functions of the operation and administration of organizations that comprise the gastronomy field.

Skills

1. Properly select the raw materials most used in the field of gastronomy.

2. Apply the traditional methods, as well as those of vanguard, in the development of technical skills for the correct handling of the equipment, tools and technologies most used in the discipline of gastronomy.

3. Apply the main practices of cleaning and security in food preparation in agreement with the standards of health and security, as well as with the regulations that apply to the field of gastronomy.

Attitudes

1. Integrate to the professional practice the ethical and legal values and principles related to the field of culinary and gastronomical sciences.

2. Show a proactive attitude towards team work as an effective and productive means for the solution of problems related to the culinary and gastronomical disciplines.

Admission Requirements

1. Meet all the admission norms established in the General Catalog.

2. To be a candidate for admission to the Associate of Arts Degree in Culinary and Gastronomic Sciences, a certificate of health, current for one year, submitted by the Department of Health, is required.

Note:

To be admitted to a practice center, a certificate of health, current for one year, submitted by the Department of Health, is required.

Some centers have additional requirements. Students are responsible for complying with any other requirement that is required by the practice center.

Academic Requirements of the Associate of Arts Degree in Culinary Arts and Gastronomic Sciences

General Education Requirements	24 credits
Major Requirements	41 credits
Total	65 credits

General Education Requirements - 24 credits

Twenty-four (24) credits are required as established in the General Catalog in the section "General Education Requirements for Associate Degrees". Students of this Program will take GEMA 1000 in the category of Basic Skills in Mathematics.

Major Requirements - 41 credits

GASC 1000	Culinary Fundamentals	3
GASC 1200	Selecting Raw Materials	3
GASC 2010	Culinary Skills I	4
GASC 2015	Nutrition and Culinary Horticulture	3
GASC 2020	Culinary Skills II	4
GASC 2500	Puerto Rican Gastronomy	3
GASC 2800	Complementary Bakery	3
GASC 2900	Global Cuisine	3
GASC 2910	Professional Practicum	4
FSMT 1210	Sanitation and Security in Food Services	1
FSMT 1220	Service Theories and Practices	2
FSMT 2101	Purchasing Systems, Inventory and Storage Control	2
FSMT 2104	Buffet and Catering Service	3
TURI 3300	Food and Services Management	3

Culinary Arts and Gastronomy Sciences (BA)

The Bachelor's Degree in Arts in Culinary Arts and Gastronomy Sciences is designed to offer students the knowledge and technical skills necessary for culinary development both locally and globally. Academic and practical activities provide students with the necessary skills for the selection, management and conversion of raw materials, identification of flavor profiles and operation in the food industry in general. The program is designed based on the foundations and theories of gastronomy sciences, sustainable practices and business with a robust component of practice in the kitchen laboratories.

The major requirements are offered through the four-year program with an exit option upon completion of the requirements of the first two years. Each year is equivalent

to a level at which the courses have been organized and developed according to their level of complexity. In the first two years, the knowledge and skills of the associate level are located. In the last two, those corresponding to the Bachelor level are located. This design articulates both levels of preparation (associate and Bachelor) integrating knowledge and skills.

The Barranquitas Campus is authorized to offer this program.

Competencies Profile of Graduates

The Bachelor's Degree Program in Culinary Arts and Gastronomy Sciences is designed to develop the competences that allow the student to:

Knowledge

Know and understand:

1. the theoretical and practical foundations of the culinary arts and culinary sciences within the discipline.

2. the selection process and the correct use of the tools and equipment commonly used in the preparation of foods related to the field of gastronomy.

3. the essential functions of the operation and administration of the organizations that are part of the field of gastronomy.

Skills

1. Select properly the most used raw materials in the field of gastronomy.

2. Apply traditional methods and techniques in the development of culinary skills.

3. Apply the traditional methods, as well as the vanguard ones, in the development of technical skills for the correct handling of the equipment, tools, and technologies generally used in the gastronomy discipline.

4. Apply the main practices of sanitation and safety in the preparation of food in accordance with health and safety standards, as well as the regulations that apply to the field of gastronomy.

5. Use oral and written communication skills effectively with regards to the language of the profession.

Attitudes

1. Integrate the ethical and legal values and principles related to the field of culinary arts and culinary sciences into professional practice.

2. Demonstrate a proactive attitude towards teamwork as an effective and productive means of solving problems related to culinary and gastronomic disciplines.

Admission Requirements

1. Comply with all the admission rules established in the General Catalog.

2. To be a candidate for admission to the Bachelor of Arts Degree in Culinary Arts and Gastronomy Sciences, a current health certificate, issued by the Department of Health, is required for one year.

3. To be a candidate for admission to the third level (third year courses) for the Bachelor of Arts in Culinary Arts and Gastronomy Sciences, you must:

   a. Have satisfactorily completed the requirements of the first two years of the Bachelor of Arts in Culinary Arts and Gastronomy Sciences. or

   b. Present evidence of having an Associate Degree in Culinary Arts and Gastronomy Sciences from a recognized and accredited higher education institution. Candidates who hold an associate degree must complete any general education requirement established by the Inter-American University of Puerto Rico.

Requirements of the Bachelor's Degree Program in Culinary Arts and Gastronomy Sciences

General Education Requirements	48 credits
Major Requirements	70 credits
Elective Courses	3 credits
Total	121 credits

General Education Requirements - 48 credits

Forty-eight (48) credits are required as explained in the General Education Requirements for Bachelors section. Students in this Program will take GEMA 1000 in the Basic Mathematics Skills category.

Major Requirements - 70 credits

GASC 1000	Culinary Fundamentals	3
GASC 1200	Selecting Raw Materials	3
GASC 2010	Culinary Skills I	4
GASC 2015	Nutrition and Culinary	3

	Horticulture	
GASC 2020	Culinary Skills II	4
GASC 2500	Puerto Rican Gastronomy	3
GASC 2800	Complementary Bakery	3
GASC 2900	Global Cuisine	3
GASC 2910	Professional Practicum	4
GASC 3026	Operations Management in the Food and Beverage Industry	3
GASC 3300	Innovation and Experimental Cooking	4
GASC 3400	Wines and Gastronomy	3
GASC 4000	Advanced Cooking	4
GASC 4040	Culinary Design and Food Aesthetics	3
GASC 4970	Culinary Arts Integrative Seminar	3
FSMT 1210	Sanitation and Security in Food Services	1
FSMT 1220	Service Theories and Practices	2
FSMT 2101	Purchasing Systems, Inventory and Storage Control	2
FSMT 2104	Buffet and Catering Service	3
HMGT 3310	Cocktail Services	3
TURI 3300	Food and Services Management	3
BADM 1900	Fundamentals of Business Management Or	3
ENTR 2200	Foundations of Entrepreneurship	3
OMSY 3030	Business Communication in Spanish Or	3
OMSY 3040	Business Communication in English	3

Cultural Management and Ecotourism (AA)

The Associate of Arts in Cultural Management and Ecotourism is designed to provide students with an integral formation through the development of knowledge, skills and attitudes that strengthen their professional training through multidisciplinary studies. The program develops professionals with specialized knowledge who will be able to meet the cultural and ecotourism management needs of the Caribbean region and the creation of small businesses to meet such needs.

The Program consists of different areas of knowledge that include the mastery of basic skills as articulated in the General Education Program, and a major component consisting of the disciplines of social sciences and humanities, international relations and business fundamentals.

The associate degree provides students with the possibility of working in companies and government or private organizations dedicated to promoting ecotourism and cultural activities in the region or to the development of such activities.

The Arecibo Campus is authorized to offer this program.

Program Goals

1. Respond to the needs of companies, organizations, government agencies and tourism by training professionals in the field of Cultural Management and Ecotourism.

2. Promote the development and application of knowledge of cultural and ecotourism management considering relevant ethical, moral and professional values.

3. Contribute to the development of professionals capable of applying knowledge, skills and attitudes to problem solving, evaluation and analysis of cultural and ecotourism management.

Program Objectives

1. Understand the fundamental aspects related to the historical, social and economic processes of the Caribbean region.

2. Interpretation of ecosystems in insular and regional geography through applied science.

3. Develop verbal and written communication skills in Spanish, English and French.

4. Acquire ecotourism activity skills by working in sustainable ecotourism microenterprises or in their creation.

5. Be a spokesperson on the integral conservation of the environment and natural resources in human economic activity.

6. Create awareness of the human relationship, the natural world, and the need to develop activities that promote quality of life.

7. Demonstrate responsibility to develop economic management in a global society that seeks to improve

the quality of life of diverse societies.

8. Be able to engage in the regional internationalization of ecotourism management.

Program graduates interested in being certified as a Tourist Guide must comply with government requirements.

Competencies Profile of Graduates

The program is designed to develop the competencies that will enable students to:

Knowledge

1. Accurately identify quantitative and communication skills in potential workplace scenarios of professional interest.

2. Understand fundamental aspects regarding the historical, social and economic processes of the region; interpretation of the development of ecosystems in insular and regional geography through the application of science to human activity.

3. Understand human relationships from a psychosocial and multicultural perspective.

Skills

1. Accurately apply quantitative skills in potential workplace scenarios of professional interest.

2. Develop verbal and written communication skills in Spanish, English and French.

3. Identify microenterprise projects that contribute to the economy and cultural activity of the region.

4. Educate regarding culture, integral environmental conservation, and natural resources in social activities.

5. Raise awareness of the importance of human relationships, the natural world and the need to restore balance between economic activity and the natural environment to promote a better quality of life.

Attitudes

1. Demonstrate responsibility as a being of a changing and multicultural society.

2. Develop ethical and humanistic commitment in response to the need for protection of the environment as an integral relationship to one's own

existence.

3. Value the development of a culture of peace, respect for human dignity and Mother Earth.

Requirements for the Associate Degree in Cultural Management and Ecoturism

General Education Requirements	24 credits	
Major Requirements	36/38 credits	
Total	60/62 credits	

General Education Requirements - 24 credits

GEEN	English - Select 6 credits from the GEEN category	6
GEP-GESP 1101	Literature and Communication: Narrative and Poetry	3
GEP-GESP 1102	Literature and Communication: Essay and Theatre	3
GEP-GECF 1010	Introduction to the Christian Faith	3
GEP-GEHS 3020	Global Society	3
GEP-GEIC 1010	Information and Computing Technologies	3
GEP-GEMA 1000	Quantitative Reasoning	3

Major Requirements - 30 credits

TURI 1020	Fundamentals of Tourism	3
TURI 1201	Natural Resources Interpretive Guide	3
TURI 2000	Tourism Legislation	3
TURI 3010	Ecotourism and Sustainable Tourism	3
HIST 2220	Puerto Rico and the Insular Caribbean in the 20th Century	3
ENTR 2200	Foundations of Entrepreneurship	3
SOCI 2970	Cultural Management and Ecotourism Workshop and Seminar	3
ANTH 3050	Studies of Popular Culture	3
GEOG 3434	Geography of Middle America And the Caribbean	3
GEOG 4494	Geography of Puerto Rico	3

Language Requirements 6 - 8 credits

Language requirements will depend on whether the student takes English or French.

GEP-GEEN 1103	English as a Second Language III: Writing	3
ENGL 2060	Conversation and Grammar	3

	Review	
	Or	
FREN 1001	Elementary French	4
FREN 1002	Elementary French	4

Cyber Security (BS)

Program description

The Bachelor of Science in Cyber Security presents a curriculum of theoretical training and practical skills in technical aspects, computerized systems, human, organizational and social aspects of cyber security that will allow the graduate to perform in various areas of the field of computing. It contains an innovative and interdisciplinary approach focused on the protection of systems. Security in computerized systems, networks, programs, and data against authorized or unauthorized access, change, or destruction of information is emphasized.

The Bayamon Campus is authorized to offer this program.

Program objectives

The Bachelor of Science in Cyber Security aims to:

1. Provide students with theoretical and practical knowledge in the field of information security.

2. Solve cyber security problems in different scenarios.

3. Identify the impact of cybersecurity risk when using technology to secure and defend cyber systems.

4. Make students aware of existing and emerging challenges in cyber infrastructure security and privacy.

5. Promote legal compliance and the ethical, social and professional responsibilities of the discipline.

6. Expose new technologies, tools and methodologies for the benefit of professionals from different disciplines.

Competencies Profile of Graduates

The Program is designed to develop the skills that allow the student to:

Knowledge

Demonstrate knowledge and understanding of:

1. computer science and mathematics appropriate to the discipline.

2. information security problems, identifying the computing principles and other relevant disciplines appropriate for their solution

3. the necessary procedures to carry out forensic analyzes and investigations that threaten the security of the information and that guarantee the privacy of the computer environment.

4. threats and risks of system infiltration.

5. applicable laws and regulations associated with discipline.

Abilities

1. Design protocols and strategies for the protection of computer systems, networks, programs, and data against authorized or unauthorized access, change, or destruction of information.

2. Apply the techniques and demonstrate the skills necessary for computing practice in the processes of evaluation and diagnosis of systems.

3. Integrate research skills and scientific and technological development in the area of information security.

4. Apply security principles and practices to maintain operations in the presence of risks and threats.

Attitudes

1. Assess the ethical-legal aspects within the discipline.

2. Appreciate working with interdisciplinary teams.

3. Evaluate the local and global impact of cyber-attacks on organizations and society in general.

Graduation requirements

In order to meet the specific graduation requirements for the Bachelor of Science in Cyber Security, the student must obtain a minimum grade of C in the concentration and related courses.

REQUIREMENTS OF THE BACHELOR OF

SCIENCE IN CYBER SECURITY

General Education Requirements	45 credits
Major Requirements	19 credits
Related Requirements	58 credits
Prescribe Distributive Requirements	3-4 credits
Total	125-126 credits

General Education Requirements

Forty-five (45) credits are required as explained in the General Education Requirements for Baccalaureate section. Students in this program are exempt from taking the Information and Computing category course (GEIC 1010).

Related Requirements - 58 credits

COMP 2120	Programming Logic	3
COMP 2315	Structured Programming	3
COMP 2400	Object Oriented Programming	3
COMP 2501	Discrete Computational Structures I	3
COMP 2800	Databases	3
COMP 2900	Data Structures	3
COMP 3015	Web Programming with Databases	3
COTN 1220	Data Communication	3
COTN 1230	Microcomputer Operating Systems	3
COTN 2121	Network Administration I	3
COTN 2122	Network Administration II	3
COTN 2160	Network Installation and Configuration of Routers and Switches	2
COTN 2230	Network Diagnosis, Service and Maintenance	3
COTN 4150	Network Security	3
COTN 4200	Cryptography	3
ENGR 3200	Probability and Statistics	3
MATH 1500	Precalculus	5
MATH 2251	Calculus I	5

Prescribed Distributive Requirements - 3 to 4 credits

COMP 3400	Software Engineering	3
COMP 2850	Movable Computation	3
COMP 4480	Artificial Intelligence	3
COTN 3971	Emerging Topics in Network Technology	3
FORS 3300	Security in Informatic Networks	3
FORS 3350	Computational Security	3
MATH 2252	Calculus II	4
CYSC 3000	Internet of Things (loT)	3
PHYS 3001	General Physics I	4

Major Requirements - 19 credits

CYSC 1000	Introduction to Cyber Security	3
CYSC 3500	Cyber-Forensics	3
CYSC 397_	Special Topics in Cyber Security	
CYSC 4100	Ethical Hacking	3
CYSC 4200	Economy in Cybersecurity	3
CYSC 4500	Capstone Project	4

Design (BA)

The Bachelor of Arts in Design prepares humanistic designers with an outlook for ethnographic, economic, technological and political reflection. In addition, it enables creative researchers to link the socio-ecological dimensions of design as expressions of contemporary resilient identities.

Framed in the strategic thinking methodology of design or Design Thinking, this program assesses the creative process from interdisciplinary, multisectoral research and multidimensional media experimentation. It links the theory to execution, and empowers the development of creative and innovative solutions in visual, environmental communication, products and services.

The student must pass required major courses and the prescribed distributive courses with a minimum grade of C.

The Metropolitan Campus is authorized to offer this Program.

Program Goals

1. Prepare multidisciplinary professionals in design focused on the mastery of the knowledge of the discipline, with an emphasis on socio-ecological, multi-sectoral and cultural research, framed in contemporary strategic thought.

2. Promote research in design from understanding and apprehension of the foundations of theoretical and applied knowledge, to produce interdisciplinary knowledge at the articulation of innovative proposals.

3. Promote research in design from understanding and apprehension of the foundations of the theoretical and applied knowledge, to produce interdisciplinary knowledge at the joint of innovative proposals.

4. From the humanist culture, foster an ethical, creative bias and inclusive collaborative exercise for the solution of problems in design as an expression of identity and resilience.

Program Objectives

1. Apply knowledge of design from a multidisciplinary perspective, committed to the methodical analysis of contextual perspectives and lateral thinking.

2. Exercise a thoughtful, balanced design, Integrator, and empathetic to the sectoral and socio-cultural contexts in favor of social welfare.

3. Estimate the design as a cognitive process and encouragement of critical thinking in the identification, anticipation and attention of needs and solutions.

4. Abstract, articulate and corporatize in tangible forms, concepts and ideas.

5. Understand the inherently dynamic and multidimensional nature of the means and processes, and use them effectively in the development of sustainable designs.

6. To act ethically in the professional exercise of discipline from the cultivation of a comprehensive, extensive and sustainable design vision.

Competencies Profile of Graduates

The program is designed to develop skills that allow the student to:

Knowledge

Demonstrate knowledge and understanding in:

1. thinking of design or *Design Thinking* as an interdisciplinary and multi-sectoral research on design methodology or design.

2. the theoretical, historical, cultural, geographical, socio-economic and political principles operating in the formulation of aesthetic concepts and design.

3. socio-ecological design solutions, user-centric identification.

Skills

1. Research, abstract and conceptualized from design prior to formal exploration, material and technique problems.

2. In multidimensional and effective way to manipulate the media in the transmission of ideas and evaluative processes.

3. Articulate creative and innovative solutions in projects that anticipate, because ahead expressions in design of communication visual, environmental products and services.

Attitudes

1. Integrate humanistic reflections on identity and contemporary design resilient mapping.

2. Assess the ethical, creative, collaborative, multidisciplinary and multi-sectoral perspective in the resolution of problems of socio-ecological design.

Requirements for the Bachelor of Arts Degree in Design

General Education Requirements	48 credits
Major Requirements	54 credits
Prescribed Distributive Requirements	15 credits
Elective Courses	3 credits
Total	120 credits

General Education Requirements - 48 credits

Forty-eight (48) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees."

Major Requirements - 54 credits

DSGN 1001	Creative Drawing: General and Figure	2
DSGN 1002	Creative Drawing II: Illustration	2

DSGN 1003	Technical Drawing	2
DSGN 1011	Design Thinking: Research Methods and Process	2
DSGN 1012	Universal Design: Anthropometry and Ergonomics	2
DSGN 1013	Placing, Culture and Design	2
DSGN 1100	Foundation Design Studio And Lab I	3
DSGN 1200	Foundation Design Studio and Lab II	3
DSGN 1300	Foundation Design Studio and Lab III	3
DSGN 2003	Design History, Theory and Criticism I	3
DSGN 2004	Design History, Theory and Criticism II	3
DSGN 2100	Design Studio I	3
DSGN 2110	Design Workshop I	1
DSGN 2200	Design Studio II	3
DSGN 2210	Design Workshop I	1
DSGN 2300	Design Studio III	3
DSGN 2310	Design Workshop III	1
DSGN 4901	Design Research and Practice I	4
DSGN 4902	Design Research And Practice II	4
DSGN 4915	Design Portfolio	4
ARTS 2403	History of Art	3

Prescribed Distributive Requirements - 15 credits

Select 15 credits from the following:

DSGN 3011	Design, Society, Market and Branding	3
DSGN 3021	Design, Photography and Video in Art and Publicity	3
DSGN 3031	Creative Illustration for Publications and Media	3
DSGN 3041	UX Design: Interactivity for Web, Apps and Videogames	3
DSGN 3111	Environmental Design: Spaces and Furniture Design	3
DSGN 3121	Sustainable Design: Contemporary Urban Landscape	3
DSGN 3131	Wearable Design: Contemporary Experimental Fashion	3
DSGN 3211	Contemporary Ceramic Design	3
DSGN 3212	Experimental Ceramic Design	3

Design and Development of Video-

Games (BS)

Design and Development of Videogames (BS)

The Bachelor of Science in Design and Development of Videogames offers students a theoretical and practical preparation that will allow them to perform successfully in the video game industry. This program is aimed at training the student with the knowledge, skills and attitudes necessary to plan, implement, distribute and market a video game.

The skills that the student will acquire in this program will prepare them to work in areas related to the design, development and publication of video games. As part of these competencies, the student will obtain comprehensive training in the area of computer programming. In addition, the student will develop knowledge and skills related to graphic design, modeling and animation of 2D and 3D objects used in video games. Likewise, you will learn to work in multidisciplinary environments by integrating values and ethical principles.

The Barranquitas, Bayamón and Fajardo campuses are authorized to offer this Program.

Program Goals

1. Train the student with the knowledge, skills and attitudes necessary to plan, implement, distribute and market a video game.

2. Prepare the student to work in areas related to the design, development and publication of video games.

3. Prepare the student to work in multidisciplinary environments, demonstrating values and ethical principles.

Program Objectives

Knowledge

1. Generate the theoretical and practical knowledge necessary to plan, implement, distribute and market a video game.

Skills

1. Produce videogames from their conceptual stage to their realization and eventual publication.

Attitudes

1. Integrate the values and ethical principles in the production process of a video game in a multidisciplinary environment.

Competencies Profile of Graduates

This Program is designed to develop the competencies that will enable students to:

Knowledge

1. Understand the fundamental concepts related to the design and development of video games.

2. Identify the necessary criteria to be able to make appropriate decisions in the planning, implementation, distribution and marketing of a video game.

3. Recognize the local and global impact of video games on individuals, organizations, and society.

Skills

1. Use techniques, skills and tools related to video game programming and the production and incorporation of digital audiovisual elements.

2. Apply theoretical and practical concepts in the design, implementation and evaluation of a video game that meets a set of requirements or needs.

3. Apply computer knowledge, mathematical foundations and principles of software engineering in the analysis, identification and solution of problems related to the development of video games.

Attitudes

1. Recognize the importance of continuous professional development and awareness regarding social, professional, ethical-legal and safety problems and responsibilities in the discipline.

2. Recognize the importance of good communication and work in multidisciplinary teams to achieve a common goal.

Graduation Requirements

In addition to complying with the graduation requirements of this Catalog, students must have approved the courses of the major with a minimum grade of C and the course GAME 4100 Project: Design, Development and Publication of a Videogame with a minimum grade of B.

Requirements for the Bachelor of Science Degree in

Design and Development of Videogames

General Education Requirements	48 credits
Major Requirements	71 credits
Prescribed Distributive Requirements	6 credits
Elective Courses	3 credits
Total	128 credits

General Education Requirements - 48 credits

Forty-eight (48) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees." Students will take the course GEMA 1200 in the Basic Skills in Mathematics category.

Major Requirements - 71 credits

COMP 2120	Programming Logic	3
COMP 2315	Structured Programming	3
COMP 2400	Object Oriented Programming	3
COMP 2501	Discrete Computational Structures I	3
COMP 2502	Discrete Computational Structures II	3
COMP 2800	Databases	3
COMP 2900	Data Structures	3
COMP 3015	Web Programming with Databases	3
COMP 3400	Software Engineering	3
COMP 3900	Visual Computation	3
GAME 1100	Design of Videogames	3
GAME 1200	Interactive Narrative for Videogames	3
GAME 2101	Graphics for Videogames I	3
GAME 2102	Graphics for Videogames II	3
GAME 2103	Graphics for Videogames III	3
GAME 3101	Videogame Programming I	3
GAME 3102	Videogame Programming II	3
GAME 3103	Videogame Programming III	3
GAME 4100	Project: Design, Development and Publication of a Videogame	3
MATH 1500	Precalculus	5
MATH 2251	Calculus I	5
PHYS 3300	Physics for Videogames	4

Prescribed Distributive Requirements - 6 credits

Select 6 credits from the following courses:

COMP 2850	Movable Computation	3
COMU 1051	Sound Production Techniques	3
GAME 3400	Artificial Intelligence for Videogames	3
GAME 4300	Emerging Issues in the Field	3

	of Videogames	
GAME 4400	Videogame Development for Consoles and Portable Equipment	3
GAME 4500	Emulators	3
GAME 4910	Internship: Experience in the Videogames Industry	3

Minor in Design and Development of Video-games

The Barranquitas, Bayamón and Fajardo Campuses are authorized to offer this minor.

Requirements for the Minor in Design and Development of Videogames - 18 credits

Courses for the Minor of Design and Development of Videogames

GAME 1100	Design of Videogames	3
GAME 2101	Graphics for Videogames I	3
GAME 2102	Graphics for Videogames II	3
GAME 3101	Videogame Programming I	3
GAME 3102	Videogame Programming II	3
GAME 3400	Artificial Intelligence for Videogames	3

Digital Graphic Design and Multimedia (BS)

Digital Graphic Design and Multimedia (BS)

The Bachelor of Science degree in Digital Graphic Design and Multimedia provides students the principles, concepts and practices of industry, publicity and communications. It is based on the development of professionals of visual communication prepared to manage new ways to offer services, plan, design, and communicate ideas and graphic messages in a clear and effective manner. It prepares them to make use of interactive electronic mediums in a world that is becoming more and more complex and competitive due to the development of new digital technology and the globalization of markets.

The Aguadilla and Fajardo campuses are authorized to offer this program face to face. The Aguadilla campus is authorized to offer this program in distance education.

Competencies Profile of Graduates

This Program is designed to develop the competencies that will enable students to:

Knowledge

1. Know the foundations and stages of the design process from the conception of an idea to its representation, development and implementation.

2. Know the fundamental guides that govern the esthetic order of visual communication, in addition to the formal elements and computer principles of a graphical composition.

3. Demonstrate knowledge of the methodologies and processes of the creation of images and the traditional and digital techniques of graphical expression.

4. Have universal historical, ethical, legal and marketing knowledge to be able to communicate effective messages within the framework visual.

5. Know the theories of the new means and new technologies in the artistic context.

Skills

1. Apply in a creative form the processes, skills, materials, techniques, styles of representation, and technology, as well as the historical knowledge, critiques and theoretical knowledge in the problem solving of design and visual communication.

2. Make creative and innovating proposals of design in different formats and bases, that respond properly to specific objectives with esthetic and functional criteria, satisfying the needs of the client and the exigencies of the market.

3. Form the concept, plan, design and implement projects of communication with different degrees of complexity in the different areas of graphical design application.

Attitudes

1. Demonstrate a deep critical awareness and reflection of the pieces of visual communication when considering their meaning, interpretation, diffusion and their ways of production, with criteria that will permit the interpretation of how these influence society and the environment.

2. Demonstrate esthetic sensitivity and creative ability that reflect originality and innovation with solid ethical and humanistic values.

3. Show awareness of the ecological impact of the means of graphical production and of the

conservation of the planet.

Requirements for the Bachelor of Science Degree in Digital Graphic Design and Multimedia

General Education Requirements	48 credits
Major Requirements	72 credits
Elective Courses	3 credits
Total	123 credits

General Education Requirements - 48 credits

Forty-eight (48) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees." The students of this Program will take course GEST 2020 (The Natural Environment and the Human Being) in the Scientific and Technological Context category, and course GEHS 3050 (Human Formation, Society, and Culture) in the Historic and Social Context category.

Major Requirements - 72 credits

DGDM 1101	History of Graphic Design	3
DGDM 1103	Foundations of Graphic Design	3
DGDM 1104	Analysis of Graphic media	3
DGDM 1201	Digital Photography Applied to Graphic Design I	3
DGDM 1202	Digital Photography Applied to Graphic Design II	3
DGDM 2201	Digital Graphic Design I	3
DGDM 2202	Digital Graphic Design II	3
DGDM 2203	Design and Graphic and Digital Typesetting	3
DGDM 2204	Introduction to Multimedia Design	3
DGDM 2205	Semiotics and Graphic Communication	3
DGDM 2206	Writing for the Digital Format and Video Production	3
DGDM 3014	Corporate Identity Design and Visual Identity	3
DGDM 3015	Packaging Design and Displays	3
DGDM 3016	Principles of Animation	3
DGDM 3021	Design and Multimedia Production I	3
DGDM 3022	Design and Multimedia Production II	3
DGDM 4003	Ethical and Legal Principles of Graphic Communication	3
DGDM 4004	Administration and Marketing of Graphic Media	3

DGDM 4005	Professional Seminar	3
DGDM 4006	Design and Production of the Digital Professional Portfolio	3
DGDM 4007	Advertising Campaign Seminar	3
DGDM 4013	Publishing Design	3
DGDM 4014	Animation and Three-dimensional Graph (3D)	3
DGDM 4910	Practice	3

Minor in Digital Graphic Design and Multimedia

The Aguadilla and Fajardo campuses are authorized to offer this minor.

Requirements for the Minor in Digital Graphic Design and Multimedia - 21 credits

Courses for the Minor in Digital Graphic Design and Multimedia

DGDM 1103	Foundations of Graphic Design	3
DGDM 1201	Digital Photography Applied to Graphic Design I	3
DGDM 1202	Digital Photography Applied to Graphic Design II	3
DGDM 2201	Digital Graphic Design I	3
DGDM 2202	Digital Graphic Design II	3
DGDM 2204	Introduction to Multimedia Design	3
DGDM 3016	Principles of Animation	3

Education (BA and Certificate)

The Teacher Education Program (TEP) of Inter American University of Puerto Rico (IAUPR) constitutes an answer to the needs and aspirations of a society in constant change and to the requirements of the Certification of Teachers Regulations of the Puerto Rico Department of Education. For this, it takes as its basis the Vision, the Mission and the Goals of IAUPR, the University's conception of an educated person, the Professional Standards of Teachers adopted by the Puerto Rico Department of Education, and the "Standards of Accreditation" of the Council for the Accreditation of Educator Preparation (CAEP).

Theoretical and Methodological Frame of the TEP

The Teacher Education Program has a psycho philosophical foundation of a behaviorist, constructivist and humanist character. This approach can be considered as an eclectic conceptual model, which allows the Program to integrate, in an organized way, principles of the three

theoretical frames in its curricular designs and in its pedagogical practice leading to the formation of the future teacher. This frame of theoretical and methodological reference will serve as a guide of the TEP for decision making and actions related to its development and its curricular revision and assessment processes, in harmony with the highest standards of quality and educational excellence.

It could be indicated, that although the TEP is based on an eclectic conceptual paradigm, it gives more emphasis to the constructivist and humanist theoretical perspectives. Under the constructivist perspective the aspiring teacher is considered as an active and totally reflective person in his professional formation process. On the other hand, the humanist approach orients the educational process of the future teacher towards his integral development as a being human, in such a way, that he contributes his competencies of knowledge, skills, attitudes and values to improve the quality of life of his students and society.

It is important to mention that during the last half of the last century, and during the part of the current century that has past, education in Puerto Rico has been framed, generally, in two learning theories: the behavioral theory and the cognitive theory. In the last decades the idea of a constructivist approach in learning and in the curriculum has acquired particular interest among educators. The psychological frame of constructivism is delimited by cognitive theories of learning, and within the curriculum of the TEP, it is founded on a humanist basis of education.

From the perspective of the philosophy and psychology of education, constructivism presents a coherent explanation of how a person learns by means of an active process of construction of knowledge through significant experiences, whereas the humanist vision in the curriculum promotes the professional and social commitment of the future teacher to attend to the educational needs and interests of the diverse student populations, with sensitivity. This implies that all teacher education programs must provide a wide variety of educational experiences for the academic formation of the aspiring teachers, directed toward the maximum development of a pedagogical culture. These practical and formative educational experiences will permit the future teacher to establish a connection between the theoretical knowledge and the pedagogical practice, in a pertinent context of human formation.

In order to give direction to its vision, mission and declaration of goals statements, the TEP uses the professional standards of teachers established by the Puerto Rico Department of Education and by the CAEP. These standards have as their main purpose to delineate the

professional characteristics that the teacher must have to achieve that the students develop, in an integral way, their capacities and potentialities to the maximum in all dimensions as human beings, within a context of a culture of peace and acceptance of diversity. In addition, these standards establish the indicators of the qualities that the teachers must have to facilitate their students' learning of knowledge, skills and attitudes. It is important to indicate that the standards also serve the teacher as parameters for him to reflect on his continuous professional development and how this must be in harmony with the learning needs of his students.

In synthesis, the task of educational formation is a complex one and is a great social responsibility. In order to assume this responsibility, the TEP has designed a curriculum focused on how to prepare the teachers that society needs and demands, as an effective means to improve its quality of life.

Vision of the TEP

The Program aspires to develop a series of integrated educational experiences, focused on the professional formation of a teacher of excellence. That is to say, that the teacher will contribute to the educational scenario with his professional competencies of knowledge, skills and attitudes necessary to promote changes and answers adapted to the educational environment. Primarily, the Program aims to prepare a teacher, who is knowledgeable of the problems of education in Puerto Rico and in other countries, in such a way that he will be able to collaborate in the process of constructive changes that will improve his quality of life and that of others.

Mission of the TEP

The Program is directed to the formation of teachers within a curriculum that provides an accumulation of articulated experiences which, at the same time, provides space for the construction of the pedagogical knowledge and content that will develop the future teacher. These experiences will be characterized by continuous reflection, practice in real scenarios, research, collaboration, relevance of the contents, pedagogical modeling and the search and use of means that will provide solutions to the typical problems of the teaching-learning processes in different contexts. In this curriculum the components of the general education, core and major courses will be integrated.

Goals of the TEP

In harmony with the vision and the mission for the TEP, the following goals, in coherence with the profile of

competencies of graduates of the Program, are established.

1. Develop educational professionals focused on the mastery of the knowledge of the discipline within the context of a scientific, pedagogical and humanist culture.

2. Promote research, the management of information and the use of technology as means to generate the production and construction of knowledge that will result in the improvement of pedagogical practice within the education system.

3. Develop education professionals, who are sensitive to the needs and interests of the diverse social groups that exist in the population, within a context of human transformation.

4. Promote the solution of problem related to the educational environment within the frame of ethical, legal and social responsibility that regulates the profession.

5. Develop educational leaders committed to their professional development as a means to promote a better pedagogical practice and, therefore, a better quality of life within the context of a culture of peace.

General Objectives of the TEP

The Program aims to achieve the following general objectives:

1. Apply, in an integrated manner, theoretical and methodological knowledge to the pedagogical practice in the educational scenario.

2. Use research, the sources of information and technological advances on which to base the development of educational innovations.

3. Show an attitude of acceptance and sensitivity to the educational needs and interests presented by the diverse student populations.

4. Apply the ethical, legal and social dimensions in the processes of problem solving and decision making related to the practice of the profession in the different educational scenarios.

5. Show commitment to the continuous improvement of the required professional competencies in the field of education.

Competencies Profile of Graduates

This Program is designed to develop the general competencies, tied to the core courses that will enable students to:

Knowledge

To know and understand:

1. The philosophical, psychological and sociological foundations that serve as a base for education and give direction to the pedagogical practice.

2. The processes of construction of cognitive, affective and psychomotor learning through the different stages of human development.

3. The importance of the creation of a harmonious physical and social environment that is adjusted to the diversity of the social groups and to the individual needs and interests of the students.

4. The laws, regulations and procedures of the educational system, as well as the ethical, legal and social implications of their professional performance.

5. The implications and importance of the integration of parents and other sectors of society in the educational task of the school community.

Skills

1. Integrate into the pedagogical practice the theoretical principles that serve as the basis for education.

2. Plan student learning by integrating educational strategies with a scientific base into instructional design.

3. Use a variety of teaching strategies to facilitate the effective learning of the complexity of the concepts, skills and attitudes of the subject matter they teach.

4. Apply the complementary processes of evaluation, assessment and measurement to determine the effectiveness of the teaching-learning processes and make decisions, which facilitate the improvement of all students' learning.

5. Apply research and the technological advances as resources to expand knowledge and to innovate and improve the pedagogical practice.

6. Use the existing computerized and educational resources to integrate technology in their teaching area or discipline.

7. Use a variety of educational and technological resources to facilitate learning in diverse student populations.

8. Use communication skills in an effective way to develop in the students the understanding of how they learn.

Attitudes

1. Show respect and tolerance to individual and cultural differences of students in the educational scenario.

2. Show a positive and binding attitude between professional development and the academic needs of the students.

3. Show a critical and creative attitude towards the management of information available in different sources related to the teaching discipline and to the field of education.

4. Assume leadership roles and professional responsibility in the different educational scenarios and communitarian contexts to promote learning and the integral development of students.

The University offers study programs for the Bachelor of Arts degree in Early Childhood Education: Preschool Level, Elementary Level (K-3), Elementary Level (4-6), Special Education, Secondary Education, Physical Education, School Health, Musical Education and Teaching Art. These programs meet the requirements for teacher certification granted by the Puerto Rico Department of Education.

Students who have had previous satisfactory teaching experience may be exempt from the teaching internship if they request it. This exemption will be subject to the following conditions:

1. The student has been teaching full time for one (1) academic years within the last four years, in a school accredited by the Puerto Rico Department of Education. Has taught in accredited private schools, Head Start Centers, or in the accredited school system of the United States. A written certification issued by the Office of Teacher Certification of the Department of Education is required.

2. The student pays 50% of the registration cost of the courses Experiences in Educational Environment I and II for the final validation of the credits.

3. The experience to be credited by the University corresponds to the requirements for the degree that the student hopes to obtain from the Institution.

Public as well as private schools serve as daytime laboratories for the students to acquire experience in the area of teaching and learning.

Accreditation

The Teacher Education Program is accredited by the "Council for the Accreditation of Educator Preparation" (CAEP) and the Aguadilla Campus by the "Teacher Education Accreditation Council" (TEAC), as follows.

Campus	Accreditation period
Aguadilla	4/2015 a 6/2023
Arecibo	4/2020 a 6/2027
Fajardo	4/2020 a 6/2026
Metropolitan	10/2021 a 10/2026
Ponce	10/2019 a 06/2022

Admission Requirements for the Teacher Education Program

All students admitted to the University that wish admission to the Teacher Education Program (TEP) will receive a Provisional Admission to the major of their interest until they satisfy the admission requirements of the TEP.

To be admitted or readmitted to the Teacher Education Program (TEP), students must fulfill the following requirements:

1. Have a minimum academic point average of 2.50 at the university level.

2. Have approved the following courses with a minimum grade of B.

   a. EDUC 1080 (Field Experience in the Educational Scenario I), or its equivalent.

   b. EDUC 2021 (History and Philosophy of Education) or EDUC 2022 (Society and Education) or EDUC 2031 (Developmental Psychology).

   c. GESP 1101 (Literature and Communication: Narrative and Essay) and 1102 (Literature and Communication: Poetry and Theater).

   d. A course in English at one of the following levels of English.

    i. Basic Level: GEEN 1101 and 1102 (English as a Second Language I and II).

    ii. Intermediate Level: GEEN 1201 and 1202 (Development of English through Reading I) or GEEN 1202 (Development of English through Reading II).

    iii.   Advanced Level: GEEN 2311 (Reading and Writing) and 2312 (Literature and Writing).

Students wishing to enter the Teaching of English as a Second Language at the Elementary Level program, or the Teaching of English as a Second Language at the Secondary Level program must have passed the courses GEEN 2311 (Reading and Writing) or GEEN 2312 (Literature and Writing).

3. Students will have two (2) semesters o three (3) trimesters, from the Provisional Admission to the TEP, to complete the admission requirements. If the student does not complete all the required courses at the end of the period, they must be evaluated by the department director to determine if they can receive an extension of one academic term to continue their studies.

Additional Notes:

1. Students presenting official evidence of having worked under a teacher or assistant teacher contract during a semester or more will be exempt from taking the course EDUC 1080 - Field Experience in the Educational Scenario I and EDUC 2890 - Field Experience in the Educational Scenario II.

2. Students in online education courses that require visits to schools must make the corresponding arrangements prior to registering in the courses.

3. The online education students of the teacher education program, who are candidates to take the courses of Clinical Experiences in Educational Scenario I and II, will take them in those schools designated by the University as Practice Centers. If there is no practice center available at their place of residence, the student must take them in the designated centers in Puerto Rico.

Satisfactory Academic Progress Requirements for the TEP

1. To remain in the Teacher Education Program, students must comply with the Satisfactory Academic

Progress Norm as established below:

Required academic index in the Teacher Education Programs, from 121-128 credits.

Percent (%) of approved credits	Progressive academic index
0-36	2.50
37-55	2.75
56-74	2.90
75-100	3.00

Required academic index in the Teacher Education Programs, from 130-137 credits.

Percent (%) of approved credits	Progressive academic index
0-34	2.50
32-52	2.75
53-69	2.90
70-100	3.00

Required academic index in the Teacher Education Programs, from 138-147 credits.

Percent (%) of approved credits	Progressive academic index
0-32	2.50
33-48	2.75
49-64	2.90
65-100	3.00

2. Student must comply with the institutional norm of credits attempted and approved.

3. Students that do not comply with the Satisfactory Academic Progress Norm of the University will be

subject to the provisions established in said norm.

Admission Requirements for the Course Clinical Experiences in the Educational Scenario II (EDUC 4013) or Practice Teaching in the TEP.

1. Have passed the Core Course Requirements of the Program, except EDUC 4551 and 4552.

2. Have passed the Major Requirements.

3. Have a minimum general academic point average of 3.00.

4. Have a minimum general academic point average of 3.00 in the Major.

5. Submit the Application for Admission to Practice Teaching in the TEP and have the approval of the Coordinator or the Practice Teaching Supervisor.

Students in online programs that are candidates for practice teaching must adhere to the requirements established in this Catalog and the regulations of the Department of Education of Puerto Rico. In the case of nonresidents of Puerto Rico, these must inquire on the procedures established in their place of residence and complete the proper proceedings. The location of the clinical experience courses will be subject to the approval of the Institution as well as of the pertinent school authorities.

Graduation Requirements of the Teacher Education Program

Every student that is a candidate for graduation from any of the majors of the Teacher Education Programs, who have been admitted or readmitted since August of 2009, must:

1. Have obtained a minimum general academic grade point average of 3.00.

2. Have obtained a minimum academic grade point average of 3.00 in the major.

3. Have obtained a minimum grade of B in the course of Clinical Experiences II (Practice Teaching course).

Graduation Grade Point Indexes for Students Admitted or Re-admitted to the Teacher Education Program before August of 2009

Academic year of Graduation	General Index in Core, Major and Specialization Courses
2009-2011	2.50
2011-2014	2.80
2014-2015 and beyond	3.00

Teacher Certification

Students interested in obtaining the teacher certification to teach in Puerto Rico, must fulfill the current requirements of the Department of Education of the Commonwealth of Puerto Rico. This applies to students who aspire to be certified by the traditional route, the alternating route or by recertification.

Likewise, students who wish to obtain a teaching certification of another territory, state of the United States of North America or another place of origin, must meet the requirements established in the corresponding jurisdiction.

Minor

Students interested in completing a Minor in Education must have a minimum grade point index of 2.50 at the time they declare admission to a minor and begin to take the required courses.

Early Childhood Education

Early Childhood Education: Preschool Level Education (BA)

The Aguadilla, Arecibo, Fajardo, Guayama, Metropolitan, Metropolitan Campus' University Center in Caguas, and San German campuses are authorized to offer this Program. The Arecibo Campus and the Metropolitan Campus' University Center in Caguas are authorized to offer the Program through online education.

Requirements for the Bachelor of Arts Degree in Early Childhood Education: Preschool Level

General Education Requirements	54 credits
Core Course Requirements	41 credits
Major Requirements	28 credits
Elective Courses	3 credits
Total	126 credits

General Education Requirements - 54 credits

Fifty-four (54) credits are required in General Education for this Program. In addition to GEHS 2010, students will take GEHS 4020 and 4030 in the Historic and Social Context category. Students will take courses GEPE 4040 and GEPE 3010 or 3020 to fulfill the six credits required in the Philosophical and Esthetic Thought category. Students of this Program are exempt from taking the course GEMA 1000 from the Basic Skills in Mathematics category. Instead they will take GEMA 1001 and GEMA 1002.

Core Course Requirements - 41 credits

EDUC 1080	Field Experiences in The Educational Scenario I	1
EDUC 2021	History and Philosophy of Education	3
EDUC 2022	Society and Education	3
EDUC 2031	Developmental Psychology	3
EDUC 2032	Learning Psychology	3
EDUC 4050	Curriculum Design	2
EDUC 2060	Integration of Technology in Education	2
EDUC 2870	The Exceptional Student Population	4
EDUC 2890	Field Experiences in The Educational Scenarios Ii	2
EDUC 3013	Teaching Strategies	2
EDUC 3015	Clinical Experiences in The Educational Scenario I	2
EDUC 4011	Evaluation and Assessment	3
EDUC 4012	Classroom Research	2
EDUC 4013	Clinical Experiences in the Educational Scenario II	4
EDUC 4551	Integration of Basic Knowledge and Communication Skills	1
EDUC 4552	Integration of Professional Skills	1
HIST 3010	Historical Process of the United States of America	3

Major Requirements - 28 credits

EDUC 2020	Health, Nutrition and First-Aid	3
EDUC 2875	Language Stimulation	3
EDUC 3003	Nature and Needs of Infants and Preschool Age Children with Developmental Deficiencies	3
EDUC 3090	Children's Literature	3
EDUC 3126	Psycho-Philosophical Influences in Curriculum Models for Early Childhood Education	4
EDUC 3130	Fine Arts in The Educational Process	3
EDUC 3170	Parents as Educators	3
EDUC 3260	Organization and Administration of Childhood Services	3
EDUC 4110	Children's Play as a Learning Process	3

Early Childhood Education: Elementary Primary Level (K-3) (BA)

The Aguadilla, Arecibo, Fajardo, Metropolitan, and San Germán campuses are authorized to offer this Program. The Arecibo Campus is also authorized to offer this Program through online education.

Requirements for the Bachelor of Arts Degree in Early Childhood Education: Primary Level (K-3)

General Education Requirements	54 credits
Core Course Requirements	41 credits
Major Requirements	29 credits
Elective Courses	3 credits
Total	127 credits

General Education Requirements - 54 credits

Fifty-four (54) credits are required in General Education for this Program. In addition to GEHS 2010, students will take GEHS 4020 and 4030 in the Historic and Social Context category. Students will take courses GEPE 4040 and GEPE 3010 or 3020 to fulfill the six credits required in the Philosophical and Esthetic Thought category. Students of this Program are exempt from taking the course GEMA 1000 from the Basic Skills in Mathematics category. Instead they will take GEMA 1001 and GEMA 1002.

Core Course Requirements - 41 credits

EDUC 1080	Field Experiences in The	1

	Educational Scenario I	
EDUC 2021	History and Philosophy of Education	3
EDUC 2022	Society and Education	3
EDUC 2031	Developmental Psychology	3
EDUC 2032	Learning Psychology	3
EDUC 4050	Curriculum Design	2
EDUC 2060	Integration of Technology in Education	2
EDUC 2870	The Exceptional Student Population	4
EDUC 2890	Field Experiences in The Educational Scenarios Ii	2
EDUC 3013	Teaching Strategies	2
EDUC 3015	Clinical Experiences in The Educational Scenario I	2
EDUC 4011	Evaluation and Assessment	3
EDUC 4012	Classroom Research	2
EDUC 4013	Clinical Experiences in the Educational Scenario II	4
EDUC 4551	Integration of Basic Knowledge and Communication Skills	1
EDUC 4552	Integration of Professional Skills	1
HIST 3010	Historical Process of the United States of America	3

Major Requirements - 29 credits

EDUC 2020	Health, Nutrition and First-Aid	3
EDUC 3075	Mathematics Curriculum, Teaching and Assessment in The Primary Grades (K-3)	2
EDUC 3083	Social Studies Curriculum, Teaching and Assessment in The Primary Grades (K-3)	2
EDUC 3090	Children's Literature	3
EDUC 3130	Fine Arts in The Educational Process	3
EDUC 3150	The Kindergarten in The School Program	3
EDUC 3170	Parents as Educators	3
EDUC 3185	English Curriculum, Teaching and Assessment at The Elementary Level (K-3)	2
EDUC 3235	Reading and Writing in the Primary Grades	3
EDUC 3265	Natural Sciences Curriculum, Teaching and Assessment in the Primary Grades (K-3)	2
EDUC 4110	Children's Play as a Learning Process	3

Early Childhood Education: Elementary Level (4-6) (BA)

The Aguadilla, Arecibo, Fajardo, Metropolitan, Ponce and San Germán campuses are authorized to offer this Program. The Arecibo Campus is also authorized to offer this Program through online education.

Requirements for the Bachelor of Arts Degree in Early Childhood Education: Elementary Level (4-6)

General Education Requirements	54 credits
Core Course Requirements	41 credits
Major Requirements	30 credits
Elective Courses	3 credits
Total	128 credits

General Education Requirements - 54 credits

Fifty-four (54) credits are required in General Education for this Program. In addition to GEHS 2010, students will take GEHS 4020 and 4030 in the Historic and Social Context category. Students will take courses GEPE 4040 and GEPE 3010 or 3020 to fulfill the six credits required in the Philosophical and Esthetic Thought category. Students of this Program are exempt from taking the course GEMA 1000 from the Basic Skills in Mathematics category. Instead they will take GEMA 1001 and GEMA 1002.

Course Requirements - 41 credits

EDUC 1080	Field Experiences in The Educational Scenario I	1
EDUC 2021	History and Philosophy of Education	3
EDUC 2022	Society and Education	3
EDUC 2031	Developmental Psychology	3
EDUC 2032	Learning Psychology	3
EDUC 2060	Integration of Technology in Education	2
EDUC 2870	The Exceptional Student Population	4
EDUC 2890	Field Experiences in The Educational Scenarios Ii	2
EDUC 3013	Teaching Strategies	2
EDUC 3015	Clinical Experiences in The Educational Scenario I	2
EDUC 4011	Evaluation and Assessment	3
EDUC 4012	Classroom Research	2
EDUC 4013	Clinical Experiences in the Educational Scenario II	4
EDUC 4050	Curriculum Design	2
EDUC 4551	Integration of Basic	1

	Knowledge and Communication Skills	
EDUC 4552	Integration of Professional Skills	1
HIST 3010	Historical Process of the United States of America	3

Major Requirements - 30 credits

EDUC 2020	Health, Nutrition and First-Aid	3
EDUC 3076	Mathematics Curriculum, Teaching and Assessment in The Primary Grades (4-6)	3
EDUC 3084	Social Studies Curriculum, Teaching and Assessment in The Primary Grades (4-6)	3
EDUC 3090	Children's Literature	3
EDUC 3130	Fine Arts in The Educational Process	3
EDUC 3170	Parents as Educators	3
EDUC 3186	English Curriculum, Teaching and Assessment at The Elementary Level (4-6)	3
EDUC 3232	Language Arts Curriculum, Teaching and Assessment at the Elementary Level (4-6)	3
EDUC 3266	Natural Sciences Curriculum, Teaching and Assessment in the Primary Grades (4-6)	3
EDUC 4110	Children's Play as a Learning Process	3

Elementary Education with a major in Special Education (BA)

The Aguadilla and Ponce campuses are authorized to offer this Program.

Requirements for the Bachelor of Arts Degree in Elementary Education with a major in Special Education

General Education Requirements	54 credits
Core Course Requirements	37 credits
Major Requirements	21 credits
Submajor Requirements	27 credits
Elective Courses	3 credits
Total	142 credits

General Education Requirements - 54 credits

Fifty-four (54) credits are required in General Education

for this Program. In addition to GEHS 2010, students will take GEHS 4020 and 4030 in the Historic and Social Context category. Students will take courses GEPE 4040 and GEPE 3010 or 3020 to fulfill the six credits required in the Philosophical and Esthetic Thought category. Students of this Program are exempt from taking the courses GEHP 3000 and GEMA 1000. Instead they will take the course HPER 3160 or 3310 to meet the requirements of the category. In the Basic Skills in Mathematics category they will take GEMA 1001 and GEMA 1002.

Core Course Requirements - 37 credits

EDUC 1080	Field Experiences in The Educational Scenario I	1
EDUC 2021	History and Philosophy of Education	3
EDUC 2022	Society and Education	3
EDUC 2031	Developmental Psychology	3
EDUC 2032	Learning Psychology	3
EDUC 2060	Integration of Technology in Education	2
EDUC 2870	The Exceptional Student Population	4
EDUC 2890	Field Experiences in The Educational Scenarios Ii	2
EDUC 3013	Teaching Strategies	2
EDUC 3015	Clinical Experiences in The Educational Scenario I	2
EDUC 4011	Evaluation and Assessment	3
EDUC 4013	Clinical Experiences in the Educational Scenario II	4
EDUC 4551	Integration of Basic Knowledge and Communication Skills	1
EDUC 4552	Integration of Professional Skills	1
HIST 3010	Historical Process of the United States of America	3

Major Requirements - 21 credits

EDUC 2020	Health, Nutrition and First-Aid	3
EDUC 3076	Mathematics Curriculum, Teaching and Assessment in The Primary Grades (4-6)	3
EDUC 3084	Social Studies Curriculum, Teaching and Assessment in The Primary Grades (4-6)	3
EDUC 3130	Fine Arts in The Educational Process	3
EDUC 3186	English Curriculum, Teaching and Assessment at The Elementary Level (4-6)	3

| EDUC 3232 | Language Arts Curriculum, Teaching and Assessment at the Elementary Level (4-6) | 3 |
| EDUC 3266 | Natural Sciences Curriculum, Teaching and Assessment in the Primary Grades (4-6) | 3 |

Submajor Requirements - 27 credits

EDUC 2905	Nature and Needs of Students with Intellectual Disability and Mental Disorders	3
EDUC 2906	Nature and Needs of Students with Specific Learning Problems, ADD And ADHD	3
EDUC 3140	Language and Reading	3
EDUC 3270	Educational Diagnosis, Evaluation and Assessment for Exceptional Students	3
EDUC 3290	Management of Student Behavior in the Classroom	3
EDUC 3420	Curricular Content, Diagnosis and Treatment of Learning Problems in Mathematics	3
EDUC 3440	Curricular Content, Diagnosis and Treatment of Literacy Problems	3
EDUC 3470	Technological Assistance, Curriculum and Materials for Teaching Exceptional Students	3
EDUC 3570	Strategies, Methods and Techniques for Teaching Students with Functional Diversity	3

Physical Education and Health Education

Physical Education and Health Education Requirements

The Health, Physical Education and Recreation curriculum offers a varied but solid course of instruction directed toward the physical, mental, emotional, intellectual and social development of its students.

Courses of study are offered for the Bachelor of Arts in Physical Education with a major in Physical Education at the Elementary Level (K-6), in Physical Education with a major in Physical Education at the Secondary Level (7-12) and Adapted Physical Education.

The Bachelor of Arts Degree in Education in School Health is designed to offer students knowledge in the teaching of health, by providing them a background in theories and educational methods at the respective levels. It also provides concepts and principles of natural and social sciences and of the humanities. It directs future teachers toward the development of a better quality of life, making them aware of the importance of health and the physical, mental and social balance of human beings in their constant interaction with their surroundings. It provides early immersion in the classroom.

The campuses authorized to offer these programs are:

1. Bachelor of Arts in Physical Education with a major in Physical Education at the Elementary Level (K-6) - The Aguadilla, Arecibo, Guayama and San Germán campuses.

2. Bachelor of Arts in Physical Education with a major in Physical Education at the Secondary Level (7-12) - The Aguadilla and San Germán campuses.

3. Bachelor of Arts in Education in Adapted Physical Education - The San Germán Campus.

4. Bachelor of Arts in Education in School Health - The Arecibo Campus is authorized to offer this Program through online education.

Requirements for the Bachelor of Arts Degree in Education with Majors in Adapted, Elementary (K-6), and Secondary (7-12) Physical Education

General Education Requirements	51 credits
Core Course Requirements in Education	32 credits
Core Course Requirements in the Major	37 credits
Major Requirements	12-15 credits
Elective Courses*	3 credits
Total	135-138 credits

General Education Requirements - 51 credits

Fifty-one (51) credits are required in General Education for this Program. In addition to GEHS 2010, students will take GEHS 4020 and 4030 in the Historic and Social Context category. Students will take courses GEPE 4040 and GEPE 3010 or 3020 to fulfill the six credits required in the Philosophical and Esthetic Thought category.

Core Course Requirements in Education - 32 credits

| EDUC 1080 | Field Experiences in The Educational Scenario I | 1 |

EDUC 2021	History and Philosophy of Education	3
EDUC 2022	Society and Education	3
EDUC 2031	Developmental Psychology	3
EDUC 2032	Learning Psychology	3
EDUC 2060	Integration of Technology in Education	2
EDUC 2870	The Exceptional Student Population	4
EDUC 2890	Field Experiences in The Educational Scenarios Ii	2
EDUC 3015	Clinical Experiences in The Educational Scenario I	2
EDUC 4013	Clinical Experiences in the Educational Scenario II	4
EDUC 4551	Integration of Basic Knowledge and Communication Skills	1
EDUC 4552	Integration of Professional Skills	1
HIST 3010	Historical Process of the United States of America	3

Core Course Requirements in the Major - 37 credits

HPER 2140	Experiences in Movement I	2
HPER 2210	Fundamentals of Physical Education and Sport Technology	3
HPER 2220	Experiences in Movement II	2
HPER 2330	First Aid and Personal Safety for Children, Youth and Adults	3
HPER 2270	Kinesiology and Functional Anatomy	3
HPER 3310	Experiences in Movement III	2
HPER 3330	Fundamental Skills and Training in Team Sports IV	3
HPER 3350	Motor Learning and Analysis of Movement	3
HPER 3360	Fundamental Skills and Training in Individual Sports V	3
HPER 3430	Personal and Community Health and Safety	3
HPER 4020	Administration of Physical Education, Wellness, Health and Sport Programs	3
HPER 4170	Physiology of Human Movement	3
HPER 4370	The Teaching of Physical Education for Special Populations	3

Major Requirements - 12 or 15 credits

Students must choose one of the following majors: Adapted Physical Education, Elementary Level, Secondary Level.

Major Requirements for Adapted Physical Education - 15 credits

Courses for the Major Adapted Physical Education

HPER 3470	Motor Therapy for Children with Disabilities	3
HPER 3475	Theory and Design of Programs for Special Populations	3
HPER 3495	Principles of Therapeutic Recreation	3
HPER 4130	Evaluation, Assessment and Research in the Teaching and Learning of Adapted Physical Education	3
EDUC 3885	Educational Theories and Technological Resources for the Teaching of Adapted Physical Education	3

Major Requirements for Physical Education: Elementary Level - 12 credits

Courses for the Major Physical Education: Elementary Level

HPER 3160	Educational and Recreational Games in the Curriculum for the Elementary Level	3
HPER 3220	Theory and Design of Physical Education Programs for the Elementary Level K-6	3
HPER 4110	Evaluation, Assessment and Research in the Teaching and Learning of Physical Education K-6	3
EDUC 3878	Educational Theory, Methodology and Technological Resources in the Teaching of Physical Education at the Elementary Level	3

Major Requirements for Physical Education: Secondary Level - 12 credits

Courses for the Major Physical Education: Secondary Level

HPER 3230	Theory and Design of Physical	3

	Education Programs Level 7-12	
HPER 4120	Evaluation, Assessment and Research in the Teaching and Learning of Physical Education 7-12	3
HPER 4305	Sport Training Methodology	3
EDUC 3875	Educational Theory, Methodology and Technological Resources in the Teaching of Physical Education at the Secondary Level 7-12	3

*Elective courses - 3 credits

In order for a candidate to aspire to teacher certification in Physical Education K-12 that the Department of Education of Puerto Rico grants in harmony with the Certification Regulation (2012), the candidate must have approved two methodology courses: one K-6 and another 7-12. For this reason:

1. the student of Physical Education at the Elementary Level will select EDUC 3875 as an elective course.

2. the student of Physical Education at the Secondary Level will select EDUC 3878 as an elective course.

However, if the student cannot select EDUC 3875 or EDUC 3878 (according to the major) as an elective course, the student must take the course as an additional degree requirement. In these cases, the student will take a total of 137 credits, instead of 134.

School Health

Requirements for the Bachelor of Arts Degree in Education in School Health

General Education Requirements	51 credits
Core Course Education Requirements	41 credits
Major Requirements	30 credits
Elective Courses	3 credits
Total	125 credits

General Education Requirements - 51 credits

Fifty-one (51) credits are required in General Education for this Program. In addition to GEHS 2010, students will take GEHS 4020 and 4030 in the Historic and Social Context category. Students will take courses GEPE 4040 and GEPE 3010 or 3020 to fulfill the six credits required in the Philosophical and Esthetic Thought category.

Core Course Education Requirements - 41 credits

EDUC 1080	Field Experiences in The Educational Scenario I	1
EDUC 2021	History and Philosophy of Education	3
EDUC 2022	Society and Education	3
EDUC 2031	Developmental Psychology	3
EDUC 2032	Learning Psychology	3
EDUC 2060	Integration of Technology in Education	2
EDUC 2870	The Exceptional Student Population	4
EDUC 2890	Field Experiences in The Educational Scenarios Ii	2
EDUC 3013	Teaching Strategies	2
EDUC 3015	Clinical Experiences in The Educational Scenario I	2
EDUC 4011	Evaluation and Assessment	3
EDUC 4012	Classroom Research	2
EDUC 4013	Clinical Experiences in the Educational Scenario II	4
EDUC 4050	Curriculum Design	2
EDUC 4551	Integration of Basic Knowledge and Communication Skills	1
EDUC 4552	Integration of Professional Skills	1
HIST 3010	Historical Process of the United States of America	3

Major Requirements - 30 credits

HPER 1870	Themes in Health, Physical Education and Recreation	2
HPER 2030	Philosophy and Basic Principles of Health	3
HPER 2330	First Aid and Personal Safety for Children, Youth and Adults	3
HPER 3430	Personal and Community Health and Safety	3
HPER 3900	Human Sexuality	3
HPER 4140	Assessment, Evaluation and Research of Teaching and Learning in School Health Education	3
BIOL 1006	Fundamentals of Biology	4
EDUC 3886	Educational Theory, Methodology, and Technological Resources in Teaching School Health (K-12)	3

EDUC 4030	Environmental Health and Ecology	3
EDUC 4040	Counseling in Health Aspects	3

Secondary Education

Secondary Education in Biology (BA)

The Bachelor of Arts Program in Secondary Education with a major in the Teaching of Biology rests on the fundamental principles of the development of the human being able to think, to analyze critically and to evaluate the learning processes. This Program has as its standards the foundation, theories and methodologies, relevant to the teaching of chemistry in the classroom. This will permit graduates to apply in the classroom the content (knowledge, skills and attitudes), the methodology (strategies, methods and techniques) and the learning evaluation methods, learned during their study program.

It will use the appropriate curricular structure and will be governed by the standards of excellence applicable to the study of biology.

The Aguadilla, Arecibo, Barranquitas, Fajardo, and San Germán campuses are authorized to offer this program.

Competencies Profile of Graduates

The Program aims to provide the theoretical and practical base for future biology teachers. This implies that they possess:

Knowledge

1. The theory, methodology and application of the curricular structure.

2. The usefulness of the scientific method in understanding natural phenomena in relation to living beings.

3. The fundamental and developing concepts that make up biological sciences.

4. Evaluation and assessment in the classroom.

5. The historical and philosophical frame of education.

6. The different stages of development of the human being and how they affect the capacity to learn.

Skills

1. The use of technology and scientific instrumentation for the comprehension, analysis, synthesis and evaluation of natural phenomena.

2. The interpretation and analysis of scientific information.

3. Communication within the scientific frame.

4. The use of the investigation process in the classroom.

5. The design and evaluation of curriculum and how this act in response to the education of a society.

6. The use of technology in the field of the education.

Attitudes

1. Strengthening ethical aspects in biology.

2. Promoting respect and appreciation for nature.

3. Promoting favorable changes in society through solutions or alternatives that improve the quality of biology teaching.

Requirements for the Bachelor of Arts Degree in Secondary Education in Biology

General Education Requirements	51 credits
Core Course Requirements	41 credits
Major Requirements	48 credits
Elective Courses	3 credits
Total	143 credits

General Education Requirements - 51 credits

Fifty-one (51) credits are required in General Education for this Program. In addition to GEHS 2010, students will take GEHS 4020 and 4030 in the Historic and Social Context category. Students will take courses GEPE 4040 and GEPE 3010 or 3020 to fulfill the six credits required in the Philosophical and Esthetic Thought category. They will take the course GEST 2030 in the Scientific and Technological Context category. Students will take the course GEMA 1200 in the Basic Skills in Mathematics category.

Core Course Requirements - 41 credits

EDUC 1080	Field Experiences in The Educational Scenario I	1
EDUC 2021	History and Philosophy of Education	3
EDUC 2022	Society and Education	3
EDUC 2031	Developmental Psychology	3
EDUC 2032	Learning Psychology	3
EDUC 2060	Integration of Technology in	2

	Education	
EDUC 2870	The Exceptional Student Population	4
EDUC 2890	Field Experiences in The Educational Scenarios Ii	2
EDUC 3013	Teaching Strategies	2
EDUC 3015	Clinical Experiences in The Educational Scenario I	2
EDUC 4011	Evaluation and Assessment	3
EDUC 4012	Classroom Research	2
EDUC 4013	Clinical Experiences in the Educational Scenario II	4
EDUC 4050	Curriculum Design	2
EDUC 4551	Integration of Basic Knowledge and Communication Skills	1
EDUC 4552	Integration of Professional Skills	1
HIST 3010	Historical Process of the United States of America	3

Major Requirements - 48 credits

BIOL 1101	General Biology I	3
BIOL 1102	General Biology II	3
BIOL 1103	Biology Skills Laboratory I	1
BIOL 1104	Biology Skills Laboratory II	1
BIOL 2103	Zoology	3
BIOL 2104	Botany	3
BIOL 3010	Genetics	3
BIOL 3106	Human Anatomy and Physiology	4
BIOL 3503	Ecology	3
EDUC 3863	Instructional Theory, Methodology and Technological Resources in the Teaching of Biology	3
CHEM 1111	General Chemistry I	4
CHEM 2212	General Chemistry II	4
MATH 1500	Precalculus	5
PHYS 3001	General Physics I	4
PHYS 3002	General Physics II	4

If, in addition to their certification as Biology teachers, students wish to be certified as Junior High School Science teachers, they must take course EDUC 3864 (Instructional Theories, Methodology, and Technological Resources in the Teaching of Science in the Junior High School) in addition the 42 credits of the core requirements.

Secondary Education in History (BA)

The Metropolitan and San Germán campuses are authorized to offer this Program.

Requirements for the Bachelor of Arts Degree in Secondary Education in History

General Education Requirements	48 credits
Core Course Requirements	38 credits
Major Requirements	39 credits
Elective Courses	6 credits
Total	131 credits

General Education Requirements - 48 credits

Forty-eight (48) credits are required in General Education Requirements for this Program. Students will take GEHS 3020 or 3050 in the Historic and Social Context category. Students will take courses GEPE 4040 and GEPE 3010 or 3020 to fulfill the six credits required in the Philosophical and Esthetic Thought category. They are exempt from taking the course GEHS 2010. Courses GEST 2020 and 2030 are required in the Scientific and Technological Context category.

Core Course Requirements - 38 credits

EDUC 1080	Field Experiences in The Educational Scenario I	1
EDUC 2021	History and Philosophy of Education	3
EDUC 2022	Society and Education	3
EDUC 2031	Developmental Psychology	3
EDUC 2032	Learning Psychology	3
EDUC 2060	Integration of Technology in Education	2
EDUC 2870	The Exceptional Student Population	4
EDUC 2890	Field Experiences in The Educational Scenarios Ii	2
EDUC 3013	Teaching Strategies	2
EDUC 3015	Clinical Experiences in The Educational Scenario I	2
EDUC 4011	Evaluation and Assessment	3
EDUC 4012	Classroom Research	2
EDUC 4013	Clinical Experiences in the Educational Scenario II	4
EDUC 4050	Curriculum Design	2
EDUC 4551	Integration of Basic Knowledge and Communication Skills	1
EDUC 4552	Integration of Professional Skills	1

Major Requirements - 39 credits

HIST 1020	The AncientWorld	3
HIST 1030	The Medieval World	3

HIST 1040	The Modern World	3
HIST 1050	The Contemporary World	3
HIST 2030	Colonial Latin America	3
	Or	
HIST 2035	Latin America Since its Independence	3
HIST 2050	Puerto Rico I	3
HIST 2055	Puerto Rico II	3
HIST 3050	United States I	3
HIST 3055	United States II	3
HIST 4020	Historiography	3
	Or	
HIST 4210	Historical Research	3
EDUC 3565	Methods and Techniques for Teaching History	3

One of the following courses:

HIST 2040	The Caribbean Since the 17th Century	3
HIST 3040	Africa	3
HIST 3060	Asia	3
HIST 3070	Russia until 19th Century	3
HIST 3075	Russia During the 19th and 20th Centuries	3

One of the following courses:

GEOG 1144	Introduction to Cultural Geography	3
GEOG 3274	Economic Geography	3
GEOG 4224	Political Geography	3

Secondary Education in Mathematics (BA)

The Arecibo, Metropolitan and San Germán campuses are authorized to offer this Program.

Requirements for the Bachelor of Arts Degree in Secondary Education in Mathematics

General Education Requirements	51 credits
Core Course Requirements	41 credits
Major Requirements	35 credits
Elective Courses	6 credits
Total	130 credits

General Education Requirements - 51 credits

Fifty-one (51) credits are required in General Education for this Program. In addition to GEHS 2010, students will take GEHS 4020 and 4030 in the Historic and Social Context category. Students will take courses GEPE 4040 and GEPE 3010 or 3020 to fulfill the six credits required in the Philosophical and Esthetic Thought category. Students will take the course GEMA 1200 in the Basic Skills in Mathematics category.

Core Course Requirements - 41 credits

EDUC 1080	Field Experiences in The Educational Scenario I	1
EDUC 2021	History and Philosophy of Education	3
EDUC 2022	Society and Education	3
EDUC 2031	Developmental Psychology	3
EDUC 2032	Learning Psychology	3
EDUC 2060	Integration of Technology in Education	2
EDUC 2870	The Exceptional Student Population	4
EDUC 2890	Field Experiences in The Educational Scenarios Ii	2
EDUC 3013	Teaching Strategies	2
EDUC 3015	Clinical Experiences in The Educational Scenario I	2
EDUC 4011	Evaluation and Assessment	3
EDUC 4012	Classroom Research	2
EDUC 4013	Clinical Experiences in the Educational Scenario II	4
EDUC 4050	Curriculum Design	2
EDUC 4551	Integration of Basic Knowledge and Communication Skills	1
EDUC 4552	Integration of Professional Skills	1
HIST 3010	Historical Process of the United States of America	3

Major Requirements - 35 credits

| EDUC 3869 | Instructional Theory, | 3 |

	Methodology and Technological Resources in the Teaching of Mathematics at the Secondary Level	
MATH 1500	Precalculus	5
MATH 2000	Discrete Methods Or	3
COMP 2501	Discrete Computational Structures I	3
MATH 2100	Introduction to Probability and Statistics	3
MATH 2251	Calculus I	5
MATH 2380	Topics in Geometry	3
MATH 3130	Theory of Numbers	3
MATH 3350	Linear Algebra	3
MATH 4391	Abstract Algebra I	3
PHYS 3001	General Physics I	4

Secondary Education in Social Studies (BA)

The San Germán Campus is authorized to offer this Program.

Requirements for the Bachelor of Arts Degree in Secondary Education in Social Studies

General Education Requirements	51 credits
Core Course Requirements	38 credits
Major Requirements	36 credits
Elective Courses	3 credits
Total	128 credits

General Education Requirements - 51 credits

Fifty-one (51) credits are required in General Education for this Program. Students will take GEHS 4020 and 4030 in the Historic and Social Context category. Students will take courses GEPE 4040 and GEPE 3010 or 3020 to fulfill the six credits required in the Philosophical and Esthetic Thought category. They are exempt from taking the course GEHS 2010. Courses GEST 2020 and 2030 are required in the Scientific and Technological Context category.

Core Course Requirements - 38 credits

EDUC 1080	Field Experiences in The Educational Scenario I	1
EDUC 2021	History and Philosophy of Education	3
EDUC 2022	Society and Education	3
EDUC 2031	Developmental Psychology	3
EDUC 2032	Learning Psychology	3
EDUC 2060	Integration of Technology in Education	2
EDUC 2870	The Exceptional Student Population	4
EDUC 2890	Field Experiences in The Educational Scenarios Ii	2
EDUC 3013	Teaching Strategies	2
EDUC 3015	Clinical Experiences in The Educational Scenario I	2
EDUC 4011	Evaluation and Assessment	3
EDUC 4012	Classroom Research	2
EDUC 4013	Clinical Experiences in the Educational Scenario II	4
EDUC 4050	Curriculum Design	2
EDUC 4551	Integration of Basic Knowledge and Communication Skills	1
EDUC 4552	Integration of Professional Skills	1

Major Requirements - 36 credits

ANTH 1040	Introduction to Anthropology	3
EDUC 3564	Methods and Techniques in Teaching Social Studies	3
GEOG 1144	Introduction to Cultural Geography	3
GEOG 4494	Geography of Puerto Rico	3
HIST 2050	Puerto Rico I	3
HIST 2055	Puerto Rico II	3
HIST 3050	United States I	3
HIST 3055	United States II	3
POLS 1011	Introduction to Political Science	3
POLS 3080	Political Economy	3
SOCI 1030	Introduction to Sociology	3
SOCI 3753	Social Problems of Puerto Rico	3

Secondary Education in Spanish (BA)

The Aguadilla, Arecibo, Barranquitas, and San Germán campuses are authorized to offer this Program. The Arecibo Campus is also authorized to offer this Program through online education.

Requirements for the Bachelor of Arts Degree in Secondary Education in Spanish

General Education Requirements	51 credits
Core Course Requirements	41 credits
Major Requirements	37 credits
Elective Courses	3 credits
Total	132 credits

General Education Requirements - 51 credits

Fifty-one (51) credits are required in General Education for this Program. In addition to GEHS 2010, students will take GEHS 4020 and 4030 in the Historic and Social Context category. Students will take courses GEPE 4040 and GEPE 3010 or 3020 to fulfill the six credits required in the Philosophical and Aesthetic Thought category.

Core Course Requirements - 41 credits

EDUC 1080	Field Experiences in The Educational Scenario I	1
EDUC 2021	History and Philosophy of Education	3
EDUC 2022	Society and Education	3
EDUC 2031	Developmental Psychology	3
EDUC 2032	Learning Psychology	3
EDUC 2060	Integration of Technology in Education	2
EDUC 2870	The Exceptional Student Population	4
EDUC 2890	Field Experiences in The Educational Scenarios Ii	2
EDUC 3013	Teaching Strategies	2
EDUC 3015	Clinical Experiences in The Educational Scenario I	2
EDUC 4011	Evaluation and Assessment	3
EDUC 4012	Classroom Research	2
EDUC 4013	Clinical Experiences in the Educational Scenario II	4
EDUC 4050	Curriculum Design	2
EDUC 4551	Integration of Basic Knowledge and Communication Skills	1
EDUC 4552	Integration of Professional Skills	1
HIST 3010	Historical Process of the United States of America	3

Major Requirements - 37 credits

Students of the Bachelor of Arts Degree in Secondary Education in Spanish must pass courses SPAN 2541 and SPAN 2542 with a minimum grade of B. The remaining

major courses must be passed with a minimum grade of C.

SPAN 2541	Advanced Grammar I	3
SPAN 2542	Advanced Grammar II	3
SPAN 3000	Linguistics	3
SPAN 3020	Writing Workshop	3
SPAN 3021	Spanish Literature I	3
SPAN 3022	Spanish Literature II	3
SPAN 3071	Spanish-American Literature I	3
SPAN 3072	Spanish-American Literature II	3
SPAN 3211	Puerto Rican Literature I	3
SPAN 3212	Puerto Rican Literature II	3
SPAN 4010	Reading Workshop	3
EDUC 4035	Methodology of Teaching the Maternal Language and Literature	4

Special Education

Interdisciplinary Special Education (PK-12) (BA)

The Bachelor of Arts Degree in Education in Special Education aims to develop a professional in special education properly prepared with the necessary knowledge, skills and attitudes so that he may provide interdisciplinary and transdisciplinary services to the student population with and without disabilities from childhood to the high school level (PK-12).

The Program is directed to prepare a professional who can effectively intervene with the families of the student population with disabilities, as well as with the other related professionals involved with this population. The educational professional will have a base to offer educational services in inclusive classrooms, in other natural environments, and in special classrooms from pre-school to the high school level.

The Guayama Campus is authorized to offer this Program.

Requirements for the Bachelor of Arts Degree in Education in Interdisciplinary Special Education (PK-12)

General Education Requirements	54 credits
Core Course Requirements	39 credits
Major Requirements	33 credits
Elective Courses	3 credits
Total	129 credits

General Education Requirements - 54 credits

Fifty-four (54) credits are required in General Education for this Program. In addition to GEHS 2010, students will take GEHS 4020 and 4030 in the Historic and Social Context category. Students will take courses GEPE 4040 and GEPE 3010 or 3020 to fulfill the six credits required in the Philosophical and Esthetic Thought category. Students of this Program are exempt from taking the course GEMA 1000 from the Basic Skills in Mathematics category. Instead they will take GEMA 1001 and GEMA 1002.

Core Course Requirements - 39 credits

EDUC 1080	Field Experiences in The Educational Scenario I	1
EDUC 2021	History and Philosophy of Education	3
EDUC 2022	Society and Education	3
EDUC 2031	Developmental Psychology	3
EDUC 2032	Learning Psychology	3
EDUC 2060	Integration of Technology in Education	2
EDUC 2870	The Exceptional Student Population	4
EDUC 2890	Field Experiences in The Educational Scenarios Ii	2
EDUC 3013	Teaching Strategies	2
EDUC 3015	Clinical Experiences in The Educational Scenario I	2
EDUC 4011	Evaluation and Assessment	3
EDUC 4012	Classroom Research	2
EDUC 4013	Clinical Experiences in the Educational Scenario II	4
EDUC 4551	Integration of Basic Knowledge and Communication Skills	1
EDUC 4552	Integration of Professional Skills	1
HIST 3010	Historical Process of the United States of America	3

Major Requirements - 33 credits

EDUC 2053	Nature and Needs of Students with Autism	3
EDUC 2875	Language Stimulation	3
EDUC 2905	Nature and Needs of Students with Intellectual Disability and Mental Disorders	3
EDUC 2906	Nature and Needs of Students with Specific Learning Problems, ADD And ADHD	3
EDUC 3003	Nature and Needs of Infants	3

	and Preschool Age Children with Developmental Deficiencies	
EDUC 3290	Management of Student Behavior in the Classroom	3
EDUC 3420	Curricular Content, Diagnosis and Treatment of Learning Problems in Mathematics	3
EDUC 3440	Curricular Content, Diagnosis and Treatment of Literacy Problems	3
EDUC 3460	Design and Development of Curriculum and Materials for Disabled Students	3
EDUC 3467	Techniques and Assessment Instruments for Students with Disabilities	3
EDUC 3470	Technological Assistance, Curriculum and Materials for Teaching Exceptional Students	3

Special Education (BA)

The Arecibo, Barranquitas, Fajardo, Metropolitan, Metropolitan Campus' University Center in Caguas, and San Germán campuses are authorized to offer this program. The Arecibo Campus and the Metropolitan Campus' University Center in Caguas are authorized to offer this Program through online education.

Requirements for the Bachelor of Arts Degree in Special Education

General Education Requirements	54 credits
Core Course Requirements	37 credits
Major Requirements	27 credits
Elective Courses	3 credits
Total	121 credits

General Education Requirements - 54 credits

Fifty-four (54) credits are required in General Education for this Program. In addition to GEHS 2010, students will take GEHS 4020 and 4030 in the Historic and Social Context category. Students will take courses GEPE 4040 and GEPE 3010 or 3020 to fulfill the six credits required in the Philosophical and Esthetic Thought category. Students of this Program are exempt from taking the course GEMA 1000 from the Basic Skills in Mathematics category. Instead they will take GEMA 1001 and GEMA 1002.

Core Course Requirements - 37 credits

EDUC 1080	Field Experiences in The Educational Scenario I	1
EDUC 2021	History and Philosophy of Education	3
EDUC 2022	Society and Education	3
EDUC 2031	Developmental Psychology	3
EDUC 2032	Learning Psychology	3
EDUC 2060	Integration of Technology in Education	2
EDUC 2870	The Exceptional Student Population	4
EDUC 2890	Field Experiences in The Educational Scenarios Ii	2
EDUC 3015	Clinical Experiences in The Educational Scenario I	2
EDUC 4011	Evaluation and Assessment	3
EDUC 4012	Classroom Research	2
EDUC 4013	Clinical Experiences in the Educational Scenario II	4
EDUC 4551	Integration of Basic Knowledge and Communication Skills	1
EDUC 4552	Integration of Professional Skills	1
HIST 3010	Historical Process of the United States of America	3

Major Requirements - 27 credits

EDUC 2905	Nature and Needs of Students with Intellectual Disability and Mental Disorders	3
EDUC 2906	Nature and Needs of Students with Specific Learning Problems, ADD And ADHD	3
EDUC 3140	Language and Reading	3
EDUC 3270	Educational Diagnosis, Evaluation and Assessment for Exceptional Students	3
EDUC 3290	Management of Student Behavior in the Classroom	3
EDUC 3420	Curricular Content, Diagnosis and Treatment of Learning Problems in Mathematics	3
EDUC 3440	Curricular Content, Diagnosis and Treatment of Literacy Problems	3
EDUC 3470	Technological Assistance, Curriculum and Materials for Teaching Exceptional Students	3
EDUC 3570	Strategies, Methods and Techniques for Teaching	3

Students with Functional Diversity

Note: Students in the Bachelor of Arts Program in Special Education are exempt from taking the courses EDUC 4050 and 3013.

Special Education in Autism (BA)

The Ponce Campus is authorized to offer this Program.

Requirements for the Bachelor of Arts Degree in Special Education in Autism

General Education Requirements	54 credits
Core Course Requirements	37 credits
Special Education Requirements	21 credits
Major Requirements	18 credits
Elective Courses	3 credits
Total	133 credits

General Education Requirements - 54 credits

Fifty-four (54) credits are required in General Education for this Program. In addition to GEHS 2010, students will take GEHS 4020 and 4030 in the Historic and Social Context category. Students will take courses GEPE 4040 and GEPE 3010 or 3020 to fulfill the six credits required in the Philosophical and Esthetic Thought category. Students of this Program are exempt from taking the course GEMA 1000 from the Basic Skills in Mathematics category. Instead they will take GEMA 1001 and GEMA 1002.

Core Course Requirements - 37 credits

EDUC 1080	Field Experiences in The Educational Scenario I	1
EDUC 2021	History and Philosophy of Education	3
EDUC 2022	Society and Education	3
EDUC 2031	Developmental Psychology	3
EDUC 2032	Learning Psychology	3
EDUC 2060	Integration of Technology in Education	2
EDUC 2870	The Exceptional Student Population	4
EDUC 2890	Field Experiences in The Educational Scenarios Ii	2
EDUC 3015	Clinical Experiences in The Educational Scenario I	2
EDUC 4011	Evaluation and Assessment	3
EDUC 4012	Classroom Research	2
EDUC 4013	Clinical Experiences in the Educational Scenario II	4

EDUC 4551	Integration of Basic Knowledge and Communication Skills	1
EDUC 4552	Integration of Professional Skills	1
HIST 3010	Historical Process of the United States of America	3

Note: Students of the Bachelor of Arts in Special Education are exempt from taking the core courses EDUC 4050 and 3013.

Special Education Requirements - 21 credits

EDUC 2905	Nature and Needs of Students with Intellectual Disability and Mental Disorders	3
EDUC 2906	Nature and Needs of Students with Specific Learning Problems, ADD And ADHD	3
EDUC 3140	Language and Reading	3
EDUC 3270	Educational Diagnosis, Evaluation and Assessment for Exceptional Students	3
EDUC 3420	Curricular Content, Diagnosis and Treatment of Learning Problems in Mathematics	3
EDUC 3440	Curricular Content, Diagnosis and Treatment of Literacy Problems	3
EDUC 3570	Strategies, Methods and Techniques for Teaching Students with Functional Diversity	3

Major Requirements - 18 credits

EDUC 2053	Nature and Needs of Students with Autism	3
EDUC 2055	Psycho-Social Aspects of Students with Autism	3
EDUC 2057	Communication Aspects of Students with Autism	3
EDUC 3053	Diagnosis, Evaluation and Assessment Techniques for Students with Autism	3
EDUC 3054	Methodology of Teaching for the Student with Autism	3
EDUC 4000	Managing the Conduct of Students with Autism	3

Note: Students in the Bachelor of Arts Program in Special Education are exempt from taking the courses EDUC 4050 and 3013.

Special Education in the Deaf and Partially Deaf (BA)

The Ponce Campus is authorized to offer this Program.

Requirements for the Bachelor of Arts Degree in Special Education in the Deaf and Partially Deaf

General Education Requirements	54 credits
Core Course Requirements	37 credits
Special Education Requirements	27 credits
Major Requirements	18 credits
Elective Courses	3 credits
Total	139 credits

General Education Requirements - 54 credits

Fifty-four (54) credits are required in General Education for this Program. In addition to GEHS 2010, students will take GEHS 4020 and 4030 in the Historic and Social Context category. Students will take courses GEPE 4040 and GEPE 3010 or 3020 to fulfill the six credits required in the Philosophical and Esthetic Thought category. Students of this Program are exempt from taking the course GEMA 1000 from the Basic Skills in Mathematics category. Instead they will take GEMA 1001 and GEMA 1002.

Core Course Requirements - 37 credits

EDUC 1080	Field Experiences in The Educational Scenario I	1
EDUC 2021	History and Philosophy of Education	3
EDUC 2022	Society and Education	3
EDUC 2031	Developmental Psychology	3
EDUC 2032	Learning Psychology	3
EDUC 2060	Integration of Technology in Education	2
EDUC 2870	The Exceptional Student Population	4
EDUC 2890	Field Experiences in The Educational Scenarios Ii	2
EDUC 3015	Clinical Experiences in The Educational Scenario I	2
EDUC 4011	Evaluation and Assessment	3
EDUC 4012	Classroom Research	2
EDUC 4013	Clinical Experiences in the Educational Scenario II	4
EDUC 4551	Integration of Basic Knowledge and Communication Skills	1
EDUC 4552	Integration of Professional	1

| | Skills | |
| HIST 3010 | Historical Process of the United States of America | 3 |

Note: Students of the Bachelor of Arts in Special Education are exempt from taking the core courses EDUC 4050 and 3013.

Special Education Requirements - 27 credits

EDUC 2905	Nature and Needs of Students with Intellectual Disability and Mental Disorders	3
EDUC 2906	Nature and Needs of Students with Specific Learning Problems, ADD And ADHD	3
EDUC 3140	Language and Reading	3
EDUC 3270	Educational Diagnosis, Evaluation and Assessment for Exceptional Students	3
EDUC 3290	Management of Student Behavior in the Classroom	3
EDUC 3420	Curricular Content, Diagnosis and Treatment of Learning Problems in Mathematics	3
EDUC 3440	Curricular Content, Diagnosis and Treatment of Literacy Problems	3
EDUC 3470	Technological Assistance, Curriculum and Materials for Teaching Exceptional Students	3
EDUC 3570	Strategies, Methods and Techniques for Teaching Students with Functional Diversity	3

Major Requirements - 18 credits

EDUC 2907	Nature and Needs of The Deaf and Partially Deaf Student	3
EDUC 2909	Sign Language in The Context of the Deaf and Partially Deaf Culture	3
EDUC 2911	Methodology and Adaptations of Materials for Teaching the Deaf and Partially Deaf Student	3
EDUC 3581	Methods of Teaching Reading and The Preparation of Materials for the deaf and Partially Deaf Student	3
EDUC 3585	Language Development in the Deaf and Partially Deaf: Theory and Practice	3
EDUC 4025	Evaluation Methods, Diagnosis and Assessment of the Deaf and Partially Deaf Student	3

Teaching of English as a Second Language

Teaching of English as a Second Language at the Elementary Level (BA)

The Aguadilla, Barranquitas, Fajardo, Metropolitan, Ponce and San Germán campuses are authorized to offer this Program.

Requirements for the Bachelor of Arts Degree in the Teaching of English as a Second Language at the Elementary Level

General Education Requirements	51 credits
Core Course Requirements	39 credits
Major Requirements	28 credits
Elective Courses	3 credits
Total	121 credits

Education Requirements - 51 credits

Fifty-one (51) credits are required in General Education for this Program. In addition to GEHS 2010, students will take GEHS 4020 and 4030 in the Historic and Social Context category. Students are required to have taken the courses GEEN 2311, 2312 and 2313. Students will take courses GEPE 4040 and GEPE 3010 or 3020 to fulfill the six credits required in the Philosophical and Aesthetic Thought category.

Core Course Requirements - 39 credits

EDUC 1080	Field Experiences in The Educational Scenario I	1
EDUC 2021	History and Philosophy of Education	3
EDUC 2022	Society and Education	3
EDUC 2031	Developmental Psychology	3
EDUC 2032	Learning Psychology	3
EDUC 2060	Integration of Technology in Education	2
EDUC 2870	The Exceptional Student Population	4
EDUC 2890	Field Experiences in The Educational Scenarios Ii	2
EDUC 3013	Teaching Strategies	2
EDUC 3015	Clinical Experiences in The	2

	Educational Scenario I	
EDUC 4011	Evaluation and Assessment	3
EDUC 4012	Classroom Research	2
EDUC 4013	Clinical Experiences in the Educational Scenario II	4
EDUC 4551	Integration of Basic Knowledge and Communication Skills	1
EDUC 4552	Integration of Professional Skills	1
HIST 3010	Historical Process of the United States of America	3

Major Requirements - 28 credits

ENGL 3007	Advanced Writing	3
ENGL 3073	Introduction to Linguistics	3
ENGL 3310	Public Speaking	3
ENGL 3320	Fundamental Structures of Grammar	3
ENGL 3325	Fundamentals of Phonetics	3
ENGL 3330	Comparative Analysis of English and Spanish	3
ENGL 3440	Children's Literature	3
ENGL 4073	Acquisition of English as a Second Language	3
EDUC 3187	English Curriculum, Teaching and Assessment at The Elementary Level (K-6)	4

Teaching of English as a Second Language at the Secondary Level (BA)

The major in the teaching of English as a second language at the secondary level is based on the fundamental developmental principles that individuals are capable of thinking, analyzing and evaluating their learning processes. It is expected that the graduates of this Program will be able to evaluate themselves through constant reflection. For this reason, the Program for the teaching of English as a second language at the secondary level has as its base the accepted fundamentals, theories and methodologies as well as their application in the classroom. This permits graduates from this Program to incorporate innovative technology for teaching and evaluation into the classroom. They will keep up-to-date with the curricular guides regarding changes and adjustments that should be made when the student population they are attending requires it.

This Program is designed with the goal of providing the theoretical base and the practical training needed by future teachers of English in secondary schools. This implies knowledge of:

1. The theory, methodology and application of curricular design.

2. The design of materials in English as a second language.

3. The theory and application of linguistics, the acquisition of English as a second language, the phonetics of United States English and the four language arts.

4. A comparative analysis of English and Spanish.

5. Evaluation and assessment in the classroom.

6. Adolescent literature in English.

7. Children's literature in English.

8. A solid base in writing, oral communication, grammar and the literary genres in English.

The Aguadilla, Arecibo, Barranquitas, Metropolitan, Ponce and San Germán campuses are authorized to offer this Program. The Arecibo Campus is authorized to offer this Program through online education.

Requirements for the Bachelor of Arts Degree in the Teaching of English as a Second Language at the Secondary Level

General Education Requirements	51 credits
Core Course Requirements	39 credits
Major Requirements	34 credits
Elective Courses	3 credits
Total	127 credits

General Education Requirements - 51 credits

Fifty-one (51) credits are required in General Education for this Program. In addition to GEHS 2010, students will take GEHS 4020 and 4030 in the Historic and Social Context category. Students are required to have taken the courses GEEN 2311, 2312 and 2313. Students will take courses GEPE 4040 and GEPE 3010 or 3020 to fulfill the six credits required in the Philosophical and Esthetic Thought category.

Core Course Requirements - 39 credits

EDUC 1080	Field Experiences in The Educational Scenario I	1
EDUC 2021	History and Philosophy of Education	3
EDUC 2022	Society and Education	3

EDUC 2031	Developmental Psychology	3
EDUC 2032	Learning Psychology	3
EDUC 2060	Integration of Technology in Education	2
EDUC 2870	The Exceptional Student Population	4
EDUC 2890	Field Experiences in The Educational Scenarios Ii	2
EDUC 3013	Teaching Strategies	2
EDUC 3015	Clinical Experiences in The Educational Scenario I	2
EDUC 4011	Evaluation and Assessment	3
EDUC 4012	Classroom Research	2
EDUC 4013	Clinical Experiences in the Educational Scenario II	4
EDUC 4551	Integration of Basic Knowledge and Communication Skills	1
EDUC 4552	Integration of Professional Skills	1
HIST 3010	Historical Process of the United States of America	3

Major Requirements - 34 credits

ENGL 3007	Advanced Writing	3
ENGL 3073	Introduction to Linguistics	3
ENGL 3310	Public Speaking	3
ENGL 3320	Fundamental Structures of Grammar	3
ENGL 3325	Fundamentals of Phonetics	3
ENGL 3330	Comparative Analysis of English and Spanish	3
ENGL 3350	The Literary Genres	3
ENGL 3400	Literature for Young Adults	3
ENGL 4073	Acquisition of English as a Second Language	3
EDUC 3188	English Curriculum, Teaching and Assessment at The Secondary Level	4

Note: Students will select an additional three credit, 3000 or 4000 level literature course in English.

Education: Minors

Students who seek a Teacher Certification must abide by the norms established by the Department of Education of Puerto Rico.

The student may choose any of the minors of the Teacher Education Program and must meet the required grade point average of 3.00 or more.

Students who seek a minor in the area of education may be enrolled in any academic program offered at the Inter-American University of Puerto Rico, excluding PEM students.

Students who seek a Teacher Certification should be counseled by PEM faculty regarding the norms established by the Department of Education of Puerto Rico of Teacher Certification Requirements, since these minors do not necessarily include all of the requirements for the Teacher Certification.

Minor in Adapted Physical Education

This minor enables the student to work with students who have some type of physical or mental impairment on the stage of games and sports. Includes modification and adaptation of physical activities so that students can participate successfully, safely and with self-confidence.

The San Germán Campus is authorized to offer this Minor.

Requirements for the Minor in Adapted Physical Education - 21 credits

Courses for the Minor in Adapted Physical Education

HPER 3470	Motor Therapy for Children with Disabilities	3
HPER 3475	Theory and Design of Programs for Special Populations	3
HPER 3495	Principles of Therapeutic Recreation	3
HPER 4130	Evaluation, Assessment and Research in the Teaching and Learning of Adapted Physical Education	3
HPER 4370	The Teaching of Physical Education for Special Populations	3
HPER 397B	Games and Sports for Disabled Students	3
EDUC 3885	Educational Theories and Technological Resources for the Teaching of Adapted Physical Education	3

Minor in Early Childhood Education Preschool Level

The Minor in Early Childhood Education: Preschool Level aspires to develop a professional in preschool education duly trained with the knowledge, skills and attitudes necessary to provide services to the student population in childhood.

The Aguadilla, Arecibo, Fajardo, and San Germán campuses are authorized to offer this Minor with 25 credits.

The Guayama Campus is authorized to offer this Minor with 21 credits.

Requirements for the Minor in Early Childhood Education Preschool Level - 25 credits

Courses for the Minor in Early Childhood Education Preschool Level

EDUC 2875	Language Stimulation	3
EDUC 3003	Nature and Needs of Infants and Preschool Age Children with Developmental Deficiencies	3
EDUC 3090	Children's Literature	3
EDUC 3126	Psycho-Philosophical Influences in Curriculum Models for Early Childhood Education	4
EDUC 3130	Fine Arts in The Educational Process	3
EDUC 3170	Parents as Educators	3
EDUC 3260	Organization and Administration of Childhood Services	3
EDUC 4110	Children's Play as a Learning Process	3

Students from the Guayama Campus will not take the courses:

EDUC 2805

EDUC 3003

Instead, students from the Guayama Campus will select one of the following courses:

Minor in Early Childhood Education Elementary Level (K-3)

The Aguadilla, Arecibo, Fajardo, and San Germán campuses are authorized to offer this Minor.

Requirements for the Minor in Early Childhood

Education Elementary Level K-3 - 23 credits

Courses for the Minor in Early Childhood Education Elementary Level K-3

EDUC 3075	Mathematics Curriculum, Teaching and Assessment in The Primary Grades (K-3)	2
EDUC 3083	Social Studies Curriculum, Teaching and Assessment in The Primary Grades (K-3)	2
EDUC 3090	Children's Literature	3
EDUC 3130	Fine Arts in The Educational Process	3
EDUC 3150	The Kindergarten in The School Program	3
EDUC 3185	English Curriculum, Teaching and Assessment at The Elementary Level (K-3)	2
EDUC 3235	Reading and Writing in the Primary Grades	3
EDUC 3265	Natural Sciences Curriculum, Teaching and Assessment in the Primary Grades (K-3)	2
EDUC 4110	Children's Play as a Learning Process	3

Minor in Early Childhood Education Elementary Level (4-6)

The Minor in Early Childhood Education Elementary Level (4-6) is for students enrolled in an education programs and other majors. However, every candidate who aspires to obtain a Teaching Certificate at the Department of Education of Puerto Rico must comply with the requirements established by that agency.

The Aguadilla, Arecibo, Fajardo, Ponce, and San Germán campuses are authorized to offer this Minor. The Arecibo Campus is authorized to offer this minor through online education.

Requirements for the Minor in Early Childhood Education Elementary Level (4-6) - 24 credits in Aguadilla, Arecibo, and San Germán

Courses for the Minor in Early Childhood Education Elementary Level (4-6) in Aguadilla, Arecibo, and San Germán

EDUC 3076	Mathematics Curriculum, Teaching and Assessment in The Primary Grades (4-6)	3
EDUC 3084	Social Studies Curriculum, Teaching and Assessment in	3

	The Primary Grades (4-6)	
EDUC 3090	Children's Literature	3
EDUC 3130	Fine Arts in The Educational Process	3
EDUC 3186	English Curriculum, Teaching and Assessment at The Elementary Level (4-6)	3
EDUC 3232	Language Arts Curriculum, Teaching and Assessment at the Elementary Level (4-6)	3
EDUC 3266	Natural Sciences Curriculum, Teaching and Assessment in the Primary Grades (4-6)	3
EDUC 4110	Children's Play as a Learning Process	3

Requirements for the Minor in Early Childhood Education Elementary Level (4-6) - 18 credits in Ponce

Courses for the Minor in Early Childhood Education Elementary Level (4-6) in Ponce

EDUC 3076	Mathematics Curriculum, Teaching and Assessment in The Primary Grades (4-6)	3
EDUC 3084	Social Studies Curriculum, Teaching and Assessment in The Primary Grades (4-6)	3
EDUC 3170	Parents as Educators	3
EDUC 3186	English Curriculum, Teaching and Assessment at The Elementary Level (4-6)	3
EDUC 3232	Language Arts Curriculum, Teaching and Assessment at the Elementary Level (4-6)	3
EDUC 3266	Natural Sciences Curriculum, Teaching and Assessment in the Primary Grades (4-6)	3

Minor in Education

The Aguadilla, Arecibo, Fajardo, and San Germán campuses are authorized to offer this Minor.

Requirements for the Minor in Education - 26 credits

Courses for the Minor in Education

EDUC 2021	History and Philosophy of Education	3
EDUC 2022	Society and Education	3
EDUC 2031	Developmental Psychology	3
EDUC 2032	Learning Psychology	3
EDUC 2060	Integration of Technology in Education	2
EDUC 2870	The Exceptional Student	4

	Population	
EDUC 3013	Teaching Strategies	2
EDUC 4011	Evaluation and Assessment	3
HIST 3010	Historical Process of the United States of America	3

Minor in Education in Teaching English as a Second Language in Elementary Level

The Aguadilla, Ponce, Fajardo, and San Germán campuses are authorized to offer this Minor.

Requirements for the Minor in Education in Teaching English as a Second Language in Elementary Level - 25 credits in Aguadilla and San Germán

Courses for the Minor in Education in Teaching English as a Second Language in Elementary Level in Aguadilla and San Germán

ENGL 3007	Advanced Writing	3
ENGL 3073	Introduction to Linguistics	3
ENGL 3320	Fundamental Structures of Grammar	3
ENGL 3325	Fundamentals of Phonetics	3
ENGL 3310	Public Speaking	3
ENGL 3440	Children's Literature	3
ENGL 4073	Acquisition of English as a Second Language	3
EDUC 3187	English Curriculum, Teaching and Assessment at The Elementary Level (K-6)	4

Requirements for the Minor in Education in Teaching English as a Second Language in Elementary Level - 19 credits in Ponce

Courses for the Minor in Education in Teaching English as a Second Language in Elementary Level in Ponce

ENGL 3073	Introduction to Linguistics	3
ENGL 3310	Public Speaking	3
ENGL 3320	Fundamental Structures of Grammar	3
ENGL 3325	Fundamentals of Phonetics	3
ENGL 3440	Children's Literature	3
EDUC 3187	English Curriculum, Teaching and Assessment at The Elementary Level (K-6)	4

Minor in Education in Teaching English as a Second Language in Secondary Level

The Aguadilla, Arecibo, and San Germán campuses are

authorized to offer this Minor. Both campuses are authorized to offer this minor through online education.

Requirements for the Minor in Education in Teaching English as a Second Language in Secondary Level - 25 credits in Aguadilla, Arecibo, and San Germán

Courses for the Minor in Education in Teaching English as a Second Language in Secondary Level

ENGL 3073	Introduction to Linguistics	3
ENGL 3320	Fundamental Structures of Grammar	3
ENGL 3325	Fundamentals of Phonetics	3
ENGL 3330	Comparative Analysis of English and Spanish	3
ENGL 3350	The Literary Genres	3
ENGL 3400	Literature for Young Adults	3
ENGL 4073	Acquisition of English as a Second Language	3
EDUC 3188	English Curriculum, Teaching and Assessment at The Secondary Level	4

Requirements for the Minor in Education in Teaching English as a Second Language in Secondary Level -19 credits in Ponce

Courses for the Minor in Education in Teaching English as a Second Language in Secondary Level

The Minor in Education in Teaching English as a Second Language at the Secondary Level in Ponce is for students from education and other majors. However, any candidate who aspires to obtain a Certificate as a Teacher from the Office of Teacher Certifications of the Department of Education of Puerto Rico must meet the requirements established by said agency.

A general average index of 2.50 and an interview in English by a professor from the area are required.

ENGL 3073	Introduction to Linguistics	3
ENGL 3310	Public Speaking	3
ENGL 3320	Fundamental Structures of Grammar	3
ENGL 3325	Fundamentals of Phonetics	3
ENGL 3400	Literature for Young Adults	3
EDUC 3188	English Curriculum, Teaching and Assessment at The Secondary Level	4

Minor in Elementary Education in Special Education

The Minor in Elementary Education in special Education is

for students enrolled in an education programs and other majors. However, every candidate who aspires to obtain a Teaching Certificate at the Department of Education of Puerto Rico must comply with the requirements established by that agency.

The Aguadilla and Ponce campuses are authorized to offer this minor.

Requirements for the Minor Elementary Education in Special Education - 24 credits

Courses for the Minor in Elementary Education in Special Education

EDUC 2031	Developmental Psychology	3
EDUC 2906	Nature and Needs of Students with Specific Learning Problems, ADD And ADHD	3
EDUC 3140	Language and Reading	3
EDUC 3270	Educational Diagnosis, Evaluation and Assessment for Exceptional Students	3
EDUC 3420	Curricular Content, Diagnosis and Treatment of Learning Problems in Mathematics	3
EDUC 3440	Curricular Content, Diagnosis and Treatment of Literacy Problems	3
EDUC 3470	Technological Assistance, Curriculum and Materials for Teaching Exceptional Students	3
EDUC 3570	Strategies, Methods and Techniques for Teaching Students with Functional Diversity	3

Minor in Interdisciplinary Special Education K-12

The Minor in Interdisciplinary Special Education PK-12 aspires to develop a duly trained special education professional with the knowledge, skills, and attitudes necessary to provide interdisciplinary and transdisciplinary services to the student population with and without disabilities from infancy to the elementary school level. top (PK-12).

It is aimed at training a professional who can intervene effectively with the families of the student population with disabilities as well as with other related professionals who intervene with this population. The educational professional will have a base to provide educational

services in inclusive classrooms, in other natural environments and special classrooms from preschool to higher level.

The Guayama Campus is authorized to offer this Minor.

Requirements for the Minor in Interdisciplinary Special Education K-12

Courses for the Minor in Interdisciplinary Special Education K-12

EDUC 2053	Nature and Needs of Students with Autism	3
EDUC 2905	Nature and Needs of Students with Intellectual Disability and Mental Disorders	3
EDUC 2906	Nature and Needs of Students with Specific Learning Problems, ADD And ADHD	3
EDUC 3290	Management of Student Behavior in the Classroom	3
EDUC 3465	Seminar: Students with Disabilities and their Families	3
EDUC 3470	Technological Assistance, Curriculum and Materials for Teaching Exceptional Students	3

Select one of the following courses

EDUC 3460	Design and Development of Curriculum and Materials for Disabled Students	3
EDUC 3420	Curricular Content, Diagnosis and Treatment of Learning Problems in Mathematics	3
EDUC 3467	Techniques and Assessment Instruments for Students with Disabilities	3
EDUC 3440	Curricular Content, Diagnosis and Treatment of Literacy Problems	3

Minor in Physical Education Elementary Level

The Aguadilla and Arecibo campuses are authorized to offer this minor.

Requirements for the Minor in Physical Education Elemental Level - 25 credits

Courses for the Minor in Physical Education Elemental Level

HPER 2140	Experiences in Movement I	2

HPER 2210	Fundamentals of Physical Education and Sport Technology	3
HPER 2220	Experiences in Movement II	2
HPER 2270	Kinesiology and Functional Anatomy	3
HPER 3350	Motor Learning and Analysis of Movement	3
HPER 3220	Theory and Design of Physical Education Programs for the Elementary Level K-6	3
HPER 4110	Evaluation, Assessment and Research in the Teaching and Learning of Physical Education K-6	3
EDUC 3878	Educational Theory, Methodology and Technological Resources in the Teaching of Physical Education at the Elementary Level	3
EDUC 3875	Educational Theory, Methodology and Technological Resources in the Teaching of Physical Education at the Secondary Level 7-12	3

Minor in Religion and Education

The Arecibo Campus is authorized to offer this minor.

Requirements for the Minor in Religion and Education - 26 credits

Courses for the Minor in Religion and Education

RELI 2013	Compared Religions	3
RELI 3011	Old Testament I	3
RELI 3021	New Testament I	3
RELI 3326	History of Christianity	3
RELI 4100	Christian Education	3
RELI 4300	Christian Education Curriculum	3
RELI 4353	Philosophy of Religion	3
EDUC 2031	Developmental Psychology	3
EDUC 3013	Teaching Strategies	2

Minor in School Health Education

The Arecibo Campus is authorized to offer this minor through online education.

Requirements for the Minor in School Health Education - 25 credits

Courses for the Minor in School Health Education

HPER 1870	Themes in Health, Physical Education and Recreation	2
HPER 2030	Philosophy and Basic Principles of Health	3
HPER 2320	First Aid and Personal Safety for Children, Youth and Adults	2
HPER 3430	Personal and Community Health and Safety	3
HPER 3900	Human Sexuality	3
HPER 4140	Assessment, Evaluation and Research of Teaching and Learning in School Health Education	3
EDUC 4030	Environmental Health and Ecology	3
EDUC 4040	Counseling in Health Aspects	3
EDUC 3886	Educational Theory, Methodology, and Technological Resources in Teaching School Health (K-12)	3

Minor in School Social Work

Only students majoring in the Bachelor of Arts degree in Social Work may take this minor.

The Aguadilla, Arecibo, Fajardo and Metropolitan campuses are authorized to offer this minor.

Requirements for the Minor for School Social Work - 18 credits

Courses for the Minor in School Social Work

EDUC 2021	History and Philosophy of Education	3
EDUC 2022	Society and Education	3
EDUC 2031	Developmental Psychology	3
EDUC 2870	The Exceptional Student Population	4
EDUC 2060	Integration of Technology in Education	2
HIST 3010	Historical Process of the United States of America	3

Minor in Secondary Education in Biology

The Aguadilla, Arecibo, Fajardo, and San Germán campuses are authorized to offer this Minor.

Requirements for the Minor in Secondary Education in Biology - 27 credits

Courses for the Minor in Secondary Education in Biology

BIOL 1101	General Biology I	3
BIOL 1102	General Biology II	3
BIOL 1103	Biology Skills Laboratory I	1
BIOL 1104	Biology Skills Laboratory II	1
BIOL 2103	Zoology	3
BIOL 2104	Botany	3
BIOL 3010	Genetics	3
BIOL 3106	Human Anatomy and Physiology	4
BIOL 3503	Ecology	3
EDUC 3863	Instructional Theory, Methodology and Technological Resources in the Teaching of Biology	3

Minor in Secondary Education in Mathematics

The Arecibo and San Germán campuses are authorized to offer this Minor.

Requirements for the Minor in Secondary Education in Mathematics - 23 credits in Arecibo

Courses for the Minor in Secondary Education in Mathematics in Arecibo

MATH 1500	Precalculus	5
MATH 2000	Discrete Methods	3
MATH 2100	Introduction to Probability and Statistics	3
MATH 2380	Topics in Geometry	3
MATH 3130	Theory of Numbers	3
MATH 3350	Linear Algebra	3
EDUC 3869	Instructional Theory, Methodology and Technological Resources in the Teaching of Mathematics at the Secondary Level	3

Requirements for Minor in Secondary Education in Mathematics - 25 credits in San Germán

Courses for the Minor in Secondary Education in Mathematics in San Germán

MATH 1500	Precalculus	5
MATH 2100	Introduction to Probability and Statistics	3
MATH 2251	Calculus I	5
MATH 2380	Topics in Geometry	3

MATH 3130	Theory of Numbers	3
EDUC 2031	Developmental Psychology	3
EDUC 3869	Instructional Theory, Methodology and Technological Resources in the Teaching of Mathematics at the Secondary Level	3

Minor in Secondary Education in Social Studies

Analysis and reflection of the biopsychosocial factors faced by the human being as a consequence of serving in a dynamic and complex society. It also includes the analysis of the different processes of sociocultural organization and adaptation from anthropological and sociological perspectives. Equally important is the analysis of the historical process of Puerto Rico and the United States through the study of economic, political, social and cultural transformations.

The San Germán Campus is authorized to offer this Minor.

Requirements for the Minor in Secondary Education in Social Studies - 25 credits

Courses for the Minor in Secondary Education in Social Studies

HIST 2055	Puerto Rico II	3
HIST 3050	United States I	3
HIST 3055	United States II	3
POLS 1011	Introduction to Political Science	3
ANTH 1040	Introduction to Anthropology	3
GEOG 1144	Introduction to Cultural Geography	3
SOCI 3753	Social Problems of Puerto Rico	3
EDUC 3013	Teaching Strategies	2
EDUC 3564	Methods and Techniques in Teaching Social Studies	3

Minor in Secondary Education in Spanish

The Aguadilla, Arecibo, and San Germán campuses are authorized to offer this Minor. The Arecibo Campus is authorized to offer this minor through online education.

Requirements for the Minor in Secondary Education in Spanish - 25 credits

Courses for the Minor in Secondary Education in Spanish

SPAN 2541	Advanced Grammar I	3

SPAN 3000	Linguistics	3
SPAN 3020	Writing Workshop	3
SPAN 3021	Spanish Literature I Or	3
SPAN 3022	Spanish Literature II	3
SPAN 3071	Spanish-American Literature I Or	3
SPAN 3072	Spanish-American Literature II	3
SPAN 3211	Puerto Rican Literature I Or	3
SPAN 3212	Puerto Rican Literature II	3
SPAN 4010	Reading Workshop	3
EDUC 4035	Methodology of Teaching the Maternal Language and Literature	4

Minor in Special Education

The Aguadilla, Arecibo, Fajardo, and San Germán campuses are authorized to offer this Minor. The Arecibo Campus is authorized to offer this minor through online education.

Requirements for the Minor in Special Education - 24 credits

Courses for the Minor in Special Education

EDUC 2905	Nature and Needs of Students with Intellectual Disability and Mental Disorders	3
EDUC 2906	Nature and Needs of Students with Specific Learning Problems, ADD And ADHD	3
EDUC 3140	Language and Reading	3
EDUC 3290	Management of Student Behavior in the Classroom	3
EDUC 3420	Curricular Content, Diagnosis and Treatment of Learning Problems in Mathematics	3
EDUC 3440	Curricular Content, Diagnosis and Treatment of Literacy Problems	3
EDUC 3470	Technological Assistance, Curriculum and Materials for Teaching Exceptional Students	3
EDUC 3570	Strategies, Methods and Techniques for Teaching	3

Students with Functional Diversity

Minor in Special Education in Autism

The Minor in Special Education in Autism is for students enrolled in an education programs and other majors. However, every candidate who aspires to obtain a Teaching Certificate at the Department of Education of Puerto Rico must comply with the requirements established by that agency.

The Ponce Campus is authorized to offer this Minor.

Requirements for the Minor in Special Education in Autism - 18 credits

Courses for the Minor in Special Education in Autism

EDUC 2053	Nature and Needs of Students with Autism	3
EDUC 2055	Psycho-Social Aspects of Students with Autism	3
EDUC 2057	Communication Aspects of Students with Autism	3
EDUC 3053	Diagnosis, Evaluation and Assessment Techniques for Students with Autism	3
EDUC 3054	Methodology of Teaching for the Student with Autism	3
EDUC 4000	Managing the Conduct of Students with Autism	3

Minor in Special Education in the Deaf and Partially Deaf

The Minor in Special Education in the Deaf and Partially Deaf is for students enrolled in an education programs and other majors. However, every candidate who aspires to obtain a Teaching Certificate at the Department of Education of Puerto Rico must comply with the requirements established by that agency.

The Ponce Campus is authorized to offer this Minor.

Requirements for the Minor in Special Education in the Deaf and Partially Deaf - 18 credits

Courses for the Minor in Special Education in the Deaf and Partially Deaf

EDUC 2907	Nature and Needs of The Deaf and Partially Deaf Student	3
EDUC 2909	Sign Language in The Context of the Deaf and Partially Deaf Culture	3
EDUC 2911	Methodology and Adaptations of Materials for Teaching the Deaf and Partially Deaf Student	3
EDUC 3581	Methods of Teaching Reading and The Preparation of Materials for the deaf and Partially Deaf Student	3
EDUC 3585	Language Development in the Deaf and Partially Deaf: Theory and Practice	3
EDUC 4025	Evaluation Methods, Diagnosis and Assessment of the Deaf and Partially Deaf Student	3

Electronic Engineering Technology (AS)

The program for the Associate of Science Degree in Electronic Engineering Technology is designed to provide the student with the competencies for the construction, operation, validation and maintenance of electronic systems in the performance of the discipline. It is also intended to provide with the opportunity to pursue a Bachelor degree in the area of electronics.

The Aguadilla and San Germán campuses are authorized to offer this Program.

Profile of the graduate's competencies

The Associate of Science Degree in Electronic Engineering Technology is designed to develop the competencies that allow the student to:

Knowledge:
Demonstrate knowledge and understanding of:

1. the laws, theorems and methods of analysis applied to electrical and electronic circuits.

2. manuals and diagrams of electrical and electronic systems.

3. the operation of analog and digital devices used in electrical and electronic systems.

4. the functioning and operation of the measurement equipment related to the electrical and electronic systems.

Skills:

1. Build electrical and electronic circuits.

2. Analyze and solve faults in electrical and electronic systems.

3. Use the appropriate measuring equipment for the maintenance of electrical and electronic systems.

4. Prepare technical reports related to the discipline.

Attitudes:

1. Demonstrate a positive attitude towards self-learning and updating in their discipline.

2. Value teamwork.

3. Demonstrate responsibility and ethical-legal commitment in the exercise of their profession.

4. Show punctuality in the exercise of their duties.

Retention Requirements

1. Comply with the Satisfactory Academic Progress Standards established in the General Catalog of the Inter-American University of Puerto Rico.

2. Pass all concentration courses with a minimum grade of C.

ASSOCIATE OF SCIENCE IN TECHNOLOGY DEGREE REQUIREMENTS OF RENEWABLE ENGINEERING

General Education Requirements	24 credits
Major Requirements	38 credits
Total	62 credits

General Education Requirements - 24 credits

GESP	Spanish - Select 6 credits from the GESP category	6
GEEN	English - Select 6 credits from the GEEN category	6
GEP-GECF 1010	Introduction to the Christian Faith	3
GEP-GEIC 1010	Information and Computing Technologies	3
GEP-GEMA 1200	Fundamentals of Algebra	3
GEP-GEHS 2010	Historical Process of Contemporary Puerto Rico Or	3
GEP-GEEC 2000	Entrepreneurial Culture	3

Major Requirements - 38 credits

ELEC 1120	Industrial Safety	3
ELEC 1170	Electronic Drawing Laboratory	1
ELEC 2121	Digital Circuits Laboratory I	1
ELEC 2131	Digital Circuits I	3
ELEC 2331	Electrical Circuits Laboratory I	1
ELEC 2332	Electrical Circuits Laboratory II	1
ELEC 2341	Electric Circuits I	3
ELEC 2342	Electrical Circuits II	3
ELEC 2471	Electronic Circuits Laboratory I	1
ELEC 2472	Electronic Circuits Laboratory II	1
ELEC 2481	Electronic Circuits I	3
ELEC 2482	Electronic Circuits II	3
ELEC 2670	Solar Energy	3
ELEC 3370	Programmable Logic Controllers	3
ENGR 2130	Introduction to Engineering Computing	3
MATH 1500	Precalculus	5

Electronic Engineering Technology (BS)

Electronic Engineering Technology (BS)

The Bachelor of Science in Electronic Engineering Technology is designed to develop in students the competencies to identify, analyze and solve technological engineering problems, as well as the development and implementation of electrical and electronic systems. It is also intended to provide them with the opportunity to pursue graduate studies.

The Aguadilla and San Germán campuses are authorized to offer this Program.

Competencies Profile of Graduates

The program is designed to develop the skills that allow the student to:

Knowledge

Demonstrate knowledge and understanding of:

1. the laws, theorems and methods of analysis applied to electrical and electronic circuits.

2. fundamentals of mathematics, science, engineering,

and technology applied to engineering technology problems.

3. manuals and diagrams of electrical and electronic systems.

4. the operation of analog and digital devices used in electrical and electronic systems.

5. the functioning and operation of measuring equipment related to electrical and electronic systems.

Skills

1. Build electrical and electronic circuits.

2. Analyze and solve faults in electrical and electronic systems.

3. Use the appropriate measuring equipment for the maintenance of electrical and electronic systems.

4. Prepare technical reports related to the discipline.

5. Design systems, components or processes for the solution of technological engineering problems.

6. Select and apply principles, procedures or methodologies required to solve engineering technology problems.

Attitudes

1. Demonstrate a positive attitude towards self-learning and updating in their discipline.

2. Value teamwork.

3. Demonstrate responsibility and ethical-legal commitment in the exercise of their profession.

4. Show punctuality in the exercise of their duties.

5. Consider the impact of engineering technology solutions in a social and global context.

Retention Requirements

1. Comply with the Satisfactory Academic Progress Standards established in the General Catalog of the Inter-American University of Puerto Rico.

2. Pass all the concentration courses and those prescribed with a minimum grade of C.

Requirements for the Bachelor of Science Degree in Electronic Engineering Technology

General Education Requirements	48 credits
Major Requirements	64 credits
Prescribed Distributive Requirements	9 credits
Elective Courses	3 credits
Total	124 credits

General Education Requirements - 48 credits

Forty-eight (48) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees." The students of this Program will take GEMA 1200 in the Basic Skills in Mathematics category.

Major Requirements - 64 credits

ELEC 1120	Industrial Safety	3
ELEC 1170	Electronic Drawing Laboratory	1
ELEC 2121	Digital Circuits Laboratory I	1
ELEC 2131	Digital Circuits I	3
ELEC 2331	Electrical Circuits Laboratory I	1
ELEC 2332	Electrical Circuits Laboratory II	1
ELEC 2341	Electric Circuits I	3
ELEC 2342	Electrical Circuits II	3
ELEC 2471	Electronic Circuits Laboratory I	1
ELEC 2472	Electronic Circuits Laboratory II	1
ELEC 2481	Electronic Circuits I	3
ELEC 2482	Electronic Circuits II	3
ELEC 3470	Industrial Electronics Laboratory	1
ELEC 3480	Industrial Electronics	3
ELEC 4210	Communications Laboratory	1
ELEC 4220	Communications	3
ELEC 4370	Instrumentation and Control Systems Laboratory	1
ELEC 4380	Instrumentation and Control Systems	3
ELEC 4971	Integration Project	3
ENGR 2130	Introduction to Engineering Computing	3
MATH 1500	Precalculus	5
MATH 2251	Calculus I	5
MATH 2252	Calculus II	4
PHYS 3311	Physics for Engineers I	4
PHYS 3312	Physics for Engineers II	4

Prescribed Distributive Requirements - 9 credits

Select nine (9) credits from the following courses:

ELEC 2670	Solar Energy	3
ELEC 3132	Digital Circuits II	3
ELEC 3370	Programmable Logic Controllers	3
ELEC 3431	Electrical Systems	3
ELEC 397_	Special Topics	3
ELEC 4020	Systems with Microcontrollers	3
ELEC 4470	Robotics and Automation	3
ELEC 4910	Professional Practice	4

Minor in Electronic Engineering Technology

The Minor in Electronic Engineering Technology is designed to provide the student of any discipline a general base on electrical and logical circuits.

The Aguadilla and San Germán Campuses are authorized to offer this minor.

Requirements for the Minor in Electronic Engineering Technology - 21 credits

Courses for the Minor in Electronic Engineering Technology

MATH 1500	Precalculus	5
ELEC 1170	Electronic Drawing Laboratory	1
ELEC 2131	Digital Circuits I	3
ELEC 2331	Electrical Circuits Laboratory I	1
ELEC 2332	Electrical Circuits Laboratory II	1
ELEC 2341	Electric Circuits I	3
ELEC 2342	Electrical Circuits II	3
ELEC 2471	Electronic Circuits Laboratory I	1
ELEC 2481	Electronic Circuits I	3

Engineering Technology in Renewable Energy (AS)

Program description

The Associate of Science Degree in Engineering Technology in Renewable Energy contains a curriculum that tempers the general knowledge about renewable energy sources. The program is designed so that the student learns to evaluate the economic viability of a renewable energy generation system, perform an energy audit, and be able to design and install ethical photovoltaic systems. This program will prepare the student to aspire to the certification conferred by the organization "North

American Board of Certified Energy Practioners" (NABCEP). The preparation of the student, committed to his continuous development and the conservation of the environment, is forged with solid ethical and moral principles. Upon completion of this Associate Degree, the student may choose to continue a bachelor's degree in related areas.

The student must pass the concentration courses with a minimum grade of C and must maintain a general average of 3.00.

The Aguadilla Campus is authorized to offer this program.

Program goals

The goals of the Associate of Science Degree in Engineering Technology in Renewable Energy respond to the institutional mission that establishes the integral formation of the student, emphasizing the development of professionals with scientific-technological knowledge in accordance with present and future needs, at the local level. international comma. The goals are:

1. Develop graduates capable of evaluating, designing, installing and repairing renewable energy systems.

2. Contribute to the integration and development of renewable energy technologies tempered to the social and economic spheres of Puerto Rico.

3. Identify and seek solutions within the production, transportation, distribution and storage of renewable energy sources present and viable in Puerto Rico.

Promote innovation in the area of renewable energy by fostering a global vision, consistent with international trends.

Program objectives

1. Apply theoretical, scientific and ethical knowledge in the field of renewable energy technologies in an integrated manner.

2. Integrate empirical concepts and critical thinking to promote research and advances in the field of renewable energy.

3. Demonstrate responsibility and commitment to their own development and to the solution of energy problems facing society.

4. Develop the necessary skills to identify and apply improvements in infrastructure and technology under

government and professional standards and regulations.

Competencies Profile of Graduates

The Associate of Science Degree in Engineering Technology in Renewable Energy is designed to develop the skills that allow the student to:

Knowledge

Demonstrate knowledge and understanding of:

1. The laws, theorems and analysis methods applied to electrical circuits and renewable energy systems.

2. Manuals and diagrams of electrical systems and photovoltaic systems.

3. Laws and regulations related to the installation of Renewable Energy Systems

4. The electrical and electronic elements that make up the photovoltaic and wind systems.

Abilities

1. Design photovoltaic and wind systems that comply with current specifications and standards.

2. Carry out audits to recommend an efficient process in the use and management of energy resources.

3. Apply preventive and corrective maintenance procedures to the electrical and electronic equipment of photovoltaic and wind generation systems. Install electrical and electronic equipment in photovoltaic and wind generation systems.

4. Prepare technical reports related to the discipline.

Attitudes

1. Demonstrate a positive attitude towards self-learning and updating in their discipline.

2. Value teamwork.

3. Demonstrate responsibility and ethical-legal commitment in the exercise of their profession.

4. Demonstrate punctuality in the exercise of their duties. Demonstrate commitment to conserving the environment.

5. Assume roles of leadership and professional responsibility in the different educational scenarios

and community contexts to promote learning and the integral development of students.

Requirements for the Associate of Science in Engineering Technology of Renewable Energy

General Education Program Requirements	24 credits
Major Requirements	40 credits
Total	64 credits

General Education Requirements - 24 credits

Twenty-four (24) credits are required as established in the General Catalog in the General Education Requirements section for Associate Degrees. Students will take:

GESP	Spanish - Select 6 credits from the GESP category	6
GEEN	English - Select 6 credits from the GEEN category	6
GEP-GEMA 1200	Fundamentals of Algebra	3
GEP-GECF 1010	Introduction to the Christian Faith	3
GEP-GEIC 1010	Information and Computing Technologies	3
GEP-GEEC 2000	Entrepreneurial Culture	3

Major Requirements - 40 credits

ELEC 2121	Digital Circuits Laboratory I	1
ELEC 2131	Digital Circuits I	3
ELEC 2342	Electrical Circuits II	3
ELEC 2332	Electrical Circuits Laboratory II	1
ELEC 2341	Electric Circuits I	3
ELEC 2331	Electrical Circuits Laboratory I	1
ELEC 2472	Electronic Circuits Laboratory II	1
ELEC 2481	Electronic Circuits I	3
ELEC 2670	Solar Energy	3
ELEC 3431	Electrical Systems	3
MATH 1500	Precalculus	5
REEN 1010	Introduction to Renewable Energy Systems	3
REEN 2010	Audit and Energy Efficiency	3
REEN 2110	Wind Systems	3

| REEN 2120 | Microcontroller Programming Laboratory | 1 |
| REEN 2910 | Integrated Practice and Professional Ethics | 3 |

Engineering

Five engineering programs are offered: Architectural Engineering, Computer Engineering, Electrical Engineering, Industrial Engineering and Mechanical Engineering.

General Admission Requirements

To be admitted to one of the Engineering programs applicants must have an admission index of 980 points or above and have graduated from high school or its equivalent with a minimum average of 2.50.

Students who do not initially meet the minimum admission requirements may be admitted to these programs, if prior to taking their first course of their major, they have a minimum grade point index of 2.00, have obtained at least a C in the course Precalculus (MATH 1500) or equivalent, and have been recommended by the appropriate engineering department director.

Transfer students, either from within the University system or from other accredited institutions and students wishing to change their major may be considered for admission to these engineering programs once they have passed Precalculus (MATH 1500) or its equivalent with a minimum grade of C and are recommended by the appropriate department director.

Student admitted to the engineering programs will graduate according to the program and the regulations of the General Catalog in force when they were admitted to the program or as any subsequent catalog.

Pre-Engineering

The Pre-Engineering program allows students to begin their engineering studies at the different Campuses of Inter American University. The Program emphasizes preparation in mathematics, sciences and languages. Students who successfully complete the program may register in the School of Engineering of the Bayamón Campus.

For admission to the Pre-Engineering program, students must have an admission index of 980 points or more and have graduated from high school or its equivalent with a minimum general grade point index of 2.50.

Students admitted to the Pre-Engineering Program must maintain a minimum average grade point index of 2.00 throughout their period of studies. Students whose index falls below 2.00 will be dropped from the Program. Students interested in continuing studies in the School of Engineering of the Bayamón Campus must complete the Pre-Engineering Program with the general grade point index of at least 2.00, pass the Precalculus course (MATH 1500) or equivalent with a minimum grade of C, and be recommended by the director of the corresponding engineering department.

All campuses are authorized to offer the Pre-Engineering Program.

Requirements for the Pre-Engineering Program

General Education Requirements	18 credits
Engineering and Related Course Requirements	17 credits
Total	35 credits

General Education Requirements - 18 credits

GEP-GESP 1101	Literature and Communication: Narrative and Poetry	3
GEP-GESP 1102	Literature and Communication: Essay and Theatre	3
GEP-GECF 1010	Introduction to the Christian Faith	3

Six credits in English:

| GEP-GEEN 1101 | English as a Second Language I: Oral Communication | 3 |
| GEP-GEEN 1102 | English as a Second Language II: Reading | 3 |

Or

| GEP-GEEN 1201 | English Communication I | 3 |
| GEP-GEEN 1202 | English Communication II | 3 |

Or

| GEP-GEEN 2311 | Reading and Writing | 3 |
| GEP-GEEN 2312 | Literature and Writing | 3 |

One course from the following is required:

| GEP-GEHS 2010 | Historical Process of Contemporary Puerto Rico | 3 |
| GEP-GEHS | Global Society | 3 |

3020
GEP-GEHS 3050   Human Formation, Society, and Culture   3
GEP-GEHS 4030   Modern and Contemporary Western Civilization   3

Engineering and Related Course Requirements - 17 credits

Students that are interested to enter the Architectural Engineering Program only have to take 14 credits in this area, since the ENGR 1100 course is not part of the requirements of that program.

CHEM 2115	General Chemistry for Engineers	4
ENGR 1100	Introduction to Engineering	3
MATH 1500	Precalculus	5
MATH 2251	Calculus I	5

Architectural Engineering (BS)

Architectural Engineering (BS)

The Bachelor of Science in Architectural Engineering has as its mission to train engineers capable of analyzing, designing, developing, and maintaining all the engineering systems related to architectural buildings, such as structural, electrical, and mechanical systems. It provides to students the knowledge and tools necessary to develop and manage a construction work following the laws that regulate construction, especially in Puerto Rico and the United States. The program incorporates a multidisciplinary approach by integrating the engineering systems in the design of buildings, recognizing and appreciating the architectural design requirements.

The Bayamón Campus is authorized to offer this Program.

Competencies Profile of Graduates

The program is designed to develop the competencies that allow the student the following abilities:

1. Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.

2. Apply engineering design to produce solutions that meet specific needs with attention to public health, safety, and well-being, as well as global, cultural, social, environmental, and economic factors.

3. Communicate effectively with a variety of audiences.

4. Recognize ethical and professional responsibilities in

engineering and make informed judgments that consider the impact of engineering solutions in the global, economic, environmental, and social context.

5. Perform effectively in a team whose members together exercise leadership, create a collaborative and inclusive environment, set goals, plan tasks, and meet objectives.

6. Develop and carry out adequate experimentation for analysis, data interpretation and engineering judgment to draw conclusions.

7. Acquire and apply new knowledge as necessary, through the use of appropriate learning strategies.

Retention Requirements of the Architectural Engineering Program

1. Comply with all Satisfactory Academic Progress norms established in the General Catalog.

2. Approve all Major, related ELEN and MECN requirement courses, and prescribed distributives courses with a minimum grade of C.

3. Have passed all prerequisite courses before taking continuation courses.

Graduation Requirements

To complete their graduation requirements, all students must take and pass a simulated fundamental engineering revalidation exam determined by the School of Engineering or the AREN 4930 EIT Exam Seminar. In case of choosing to take the exam and not passing it, the student will have to enroll and pass the AREN 4930 EIT Exam Seminar.

Note: Those students who provide evidence of having passed the foundational exam for the engineering revalidation offered by the National Council of Examiners for Engineering and Surveying (NCEES) will be exempt from meeting this requirement.

Requirements for the Bachelor of Science Degree in Architectural Engineering

General Education Requirements	27 credits
Core Course Requirements	38 credits
Major Requirements	42 credits
Related Requirements	41 credits
Prescribed Distributive Requirements	3-9 credits
Elective Courses	3 credits
Total	154-160 credits

General Education Requirements - 27 credits

Twenty-seven (27) credits are required as explained the General Education requirements for Bachelor's Degrees. Students of this Program are exempt from taking the GEMA 1200 course in the category of Basic Skills in Mathematics, GEIC 1010 Information and Computing, and the course GEEC 2000 Entrepreneurial Culture in the category of Entrepreneurial Culture. They will only take the GEPE 4040 course in the Philosophical and Aesthetic Thought Category. In the Historical and Social Context Category, one of the following courses will be taken: GEHS 2010, 3020, 3050, or 4030. No courses will be taken in the Scientific and Technological Context Category or in the Category of Health and Quality of Life.

Core Requirements - 38 credits

CHEM 2115	General Chemistry for Engineers	4
ENGR 1200	Introduction to Sustainable Engineering	3
ENGR 2130	Introduction to Engineering Computing	3
ENGR 3200	Probability and Statistics	3
MATH 1500	Precalculus	5
MATH 2251	Calculus I	5
MATH 2252	Calculus II	4
MATH 3350	Linear Algebra	3
PHYS 3311	Physics for Engineers I	4
PHYS 3312	Physics for Engineers II	4

Major Requirements - 45 credits

AREN 1100	Architecture and Building Technology	3
AREN 2220	Architectural Engineering Graphics	3
AREN 3020	Architectural Engineering Materials	3
AREN 3025	Architectural Engineering Materials Laboratory	1

AREN 3110	Structural Analysis	3
AREN 4021	Construction Engineering I	3
AREN 4022	Construction Engineering II	3
AREN 4110	Computational Structural Analysis	4
AREN 4120	Structural Dynamics	3
AREN 4200	Design of Concrete Structures	3
AREN 4210	Design of Steel Structures	3
AREN 4220	Soil Mechanics and Foundations	3
AREN 4230	Fire Protection Systems	3
AREN 4250	Illumination Systems	3
AREN 4810	Design Project in Architectural Engineering	4

Related Requirements - 38 credits

ELEN 4375	Electrical Systems Design for Buildings	3
ELEN 4110	Power Systems Analysis	3
ELEN 4120	Electrical Engineering Laboratory	1
ENGR 2220	Computerized Engineering Graphics	3
ENGR 3365	Fundamentals of Electrical Engineering	3
MATH 3250	Calculus III	3
MATH 3400	Differential Equations	3
MECN 3005	Vectorial Mechanics for Engineers: Statics	3
MECN 3010	Vectorial Mechanics for Engineers: Dynamics	3
MECN 3115	Fluid Mechanics and its Applications	3
MECN 3165	Solid Mechanics	3
MECN 4201	Thermodynamics I	3
MECN 4230	Air Conditioning and Refrigeration	3
MECN 4235	Heating, Ventilation, and Air Conditioning Systems Design	3
MECN 4710	Fluid Mechanics and Thermal Science Laboratory	1

Prescribed Distributive Requirements - 3-9 credits

A minimum of 3 credits are required from the following courses:

AREN 4240	Elevators and Electrical Escalators	3
AREN 497_	Special Topics	3
MECN 3140	Power Systems of Fluids	3
MECN 4220	Design of Thermal Systems	3
MECN 4240	Applied Solar Energy	3

Experience Outside the Classroom

The student interested in expanding their knowledge in the field, obtaining experiences of practice and research or prepare for the fundamental engineering revalidation exam, may take up to a maximum of six additional credits (6) from the previous group of courses.

AREN 4910	Practice in Architectural Engineering	3
AREN 4921	Undergraduate Research in Architectural Engineering I	3
AREN 4922	Undergraduate Research in Architectural Engineering Ii	3
AREN 4930	EIT Exam Seminar	2

Minor in Architectural Engineering

The minor in Architectural Engineering is for students of engineering programs.

The Bayamón Campus is authorized to offer this minor.

Requirements for the Minor in Architectural Engineering - 18 or 19 credits

Courses for the Minor in Architectural Engineering

AREN 1100	Architecture and Building Technology	3
AREN 4021	Construction Engineering I	3
AREN 4022	Construction Engineering II	3

Select three (3) courses from the following:

AREN 2220	Architectural Engineering Graphics	3
AREN 4230	Fire Protection Systems	3
AREN 4240	Elevators and Electrical Escalators	3
AREN 4250	Illumination Systems	3
ELEN 4110	Power Systems Analysis	3
ELEN 4375	Electrical Systems Design for Buildings	3
MECN 3115	Fluid Mechanics and its Applications	3
MECN 4201	Thermodynamics I	3
MECN 4230	Air Conditioning and Refrigeration	3
MECN 4235	Heating, Ventilation, and Air Conditioning Systems Design	3
MECN 4240	Applied Solar Energy	3

*The course ELEN 4140 can be replaced by course ELEN 4351 Power Systems Analysis I of 4 credits.

Computer Engineering (BS)

Computer Engineering (BS)

The Bachelor of Science in Computer Engineering Program includes the design of computers and systems based on computers. It focuses in the study of software and hardware and the communication and interaction between them. The program includes the study and the application of theory, principles and practice of electrical engineering and the mathematics to solve problems involving the design of computers, devices and programs that interact with users and with each other. This Program is accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET)" (www.abet.org).

The Bayamón Campus is authorized to offer this Program.

Program objectives

Develop professionals who can:

1. Perform successfully in the world of work by assuming increasing responsibilities in the areas of computer engineering.

2. Continue advanced studies in the areas of computer engineering.

3. Demonstrate commitment to continuous professional improvement in their areas of interest, including membership in professional societies.

Competencies Profile of Graduates

The program is designed to develop the skills that allow the student the ability to:

1.

Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.

2.

Apply engineering design to produce solutions that meet specific needs in public health, safety, and well-being, as well as global, cultural, social, environmental, and economic factors.

3.

Communicate effectively with a variety of audiences.

4.

Recognize ethical and professional responsibilities in engineering and make informed judgments that consider the impact of engineering solutions in the global, economic, environmental, and social context.

5.

Perform effectively in a team whose members together exercise leadership, create a collaborative and inclusive environment, set goals, plan tasks, and meet objectives.

6.

Develop and carry out adequate experimentation for analysis, data interpretation and engineering judgment to draw conclusions.

7.

Acquire and apply new knowledge as necessary, through the use of appropriate learning strategies.

Graduation Requirements

To complete their graduation requirements, all students should take and pass a simulated engineering foundational revalidation exam determined by the School of Engineering or the ELEN 4930 EIT Exam Seminar. In case of choosing to take the exam and not passing it, the student will have to enroll and pass the ELEN 4930 EIT Exam Seminar.

Note: Those students who provide evidence of having passed the foundational exam for the engineering revalidation offered by the National Council Examiners for Engineering and Surveying (NCEES) will be exempt from meeting this requirement.

Requirements for the Bachelor of Science Degree in Computer Engineering

General Education Requirements	27 credits
Core Course Requirements	38 credits
Major Requirements	55 credits
Related Requirements	9 credits
Prescribed Distributive Requirements	9-15 credits
Elective Courses	3 credits
Total	141-147 credits

General Education Requirements - 27 credits

Twenty-seven (27) credits are required as explained below. Students of this Program are exempt from taking the GEMA 1200 course in the category of Basic Skills in Mathematics, GEIC 1010 Information and Computing and the course GEEC 2000 Entrepreneurial Culture in the Entrepreneurial Culture Category. They will only take the GEPE 4040 course in the Philosophical and Aesthetic Thought Category. In the Historical and Social Context Category, one of the following courses will be taken: GEHS 2010, 3020, 3050, or 4030. No courses will be taken in the Scientific and Technological Context Category or in the Category of Health and Quality of Life.

Core Requirements - 38 credits

ENGR 1100	Introduction to Engineering	3
ENGR 1200	Introduction to Sustainable Engineering	3
ENGR 3300	Engineering Economics	3
CHEM 2115	General Chemistry for Engineers	4
MATH 1500	Precalculus	5
MATH 2251	Calculus I	5
MATH 2252	Calculus II	4
MATH 3350	Linear Algebra	3
PHYS 3311	Physics for Engineers I	4
PHYS 3312	Physics for Engineers II	4

Major Requirements - 55 credits

COEN 2210	Introduction to Programming	4
COEN 2220	Advanced Programming	4
COEN 2310	Discrete Mathematics for Computer Engineering	3
COEN 3410	Software Design and Construction	3
COEN 3510	Operating Systems	4
COEN 4510	Computer Architecture	4
ELEN 3301	Electric Circuits I	4
ELEN 3302	Electric Circuits II	4
ELEN 3311	Electronics I	4
ELEN 3320	Logic Circuits	4
ELEN 3430	Signals and Systems	3
ELEN 4020	Microcontrollers	3
ELEN 4410	Digital Systems Design	4
ELEN 4610	Analog and Digital Communications	4
ELEN 4810	Electrical and Computers Engineering Project Design	3

Related Requirements - 9 credits

ENGR 3200	Probability and Statistics	3
MATH 3250	Calculus III	3
MATH 3400	Differential Equations	3

Prescribed Distributive Requirements - 9-15 credits

A minimum of 9 credits are required from the following courses:

COEN 397_	Special Topics	3 to 4
COEN 4420	Computerized Information Systems Design	4
COEN 4422	Design of User Interface and Prototypes	3
COEN 4423	Design of Expert Systems	3
COEN 4452	Cyber Security	4
COEN 4535	Integrated Computer Systems	4
COEN 4550	Parallel Computation Design	3
COEN 4560	Design and Construction of Compilers	3
ELEN 3312	Electronics II	4
ELEN 4627	Data Communications Networks	3

Experience Outside the Classroom

The student interested in expanding their knowledge, obtain experiences of practice and research to prepare for the fundamental engineering revalidation exam, may take up to a maximum of six (6) additional credits from the previous group of courses or the following courses:

COEN 4915	Practicum in Computer Engineering	3
COEN 4921	Undergraduate Research in Computer Engineering I	3
COEN 4922	Undergraduate Research in Computer Engineering Ii	3
ELEN 4930	EIT Exam Seminar	2

Minor in Hardware Systems and Integrated Systems

For students from the Engineering Programs.

The Bayamón Campus is authorized to offer this minor.

Requirement for the Minor in Hardware Systems and Integrated Systems - 26 credits

Courses for the Minor in Hardware Systems and Integrated Systems

Select 26 credits from the following courses:

ELEN 3301	Electric Circuits I	4
ELEN 3311	Electronics I	4
ELEN 3312	Electronics II	4
ELEN 3320	Logic Circuits	4
ELEN 4020	Microcontrollers	3
ELEN 4410	Digital Systems Design	4

ELEN 4627	Data Communications Networks	3
COEN 4510	Computer Architecture	4
COEN 4535	Integrated Computer Systems	4
ENGR 3365	Fundamentals of Electrical Engineering	3
MATH 3400	Differential Equations	3

Note: Interested Industrial Engineering students should take the courses ENGR 3365 and MATH 3400. The course ENGR 3365 does not apply to students of: Electrical Engineering, Mechanical Engineering or Computer Engineering. This course replaces the ELEN 3301 requirement of the ELEN 3302.

Minor in Software Systems

For students of Engineering Programs.

The Bayamón Campus is authorized to offer this minor.

Requirement for the Minor in Software Systems - 21 credits

Course for the Minor in Software Systems

Select 21 credits from the following courses:

COEN 2220	Advanced Programming	4
COEN 3410	Software Design and Construction	3
COEN 3510	Operating Systems	4
COEN 4420	Computerized Information Systems Design	4
COEN 4422	Design of User Interface and Prototypes	3
COEN 4423	Design of Expert Systems	3
COEN 4510	Computer Architecture	4
COEN 4550	Parallel Computation Design	3

Electrical Engineering (BS)

Electrical Engineering (BS)

The Bachelor of Science Degree Program in Electrical Engineering (BSEE) includes the study and design of production systems and the transmission and measurement of electrical signals. It emphasizes the analysis, design, implementation and testing of these systems. In the curriculum, there are four sub-majors: Communication Systems; Control Systems; Electronic Systems; and Power and Energy Systems. The Electrical Engineering Program is accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET)" (www.abet.org).

Through this program of studies, we aspire to train the student to practice electrical engineering at the professional level.

The Bayamón Campus is authorized to offer this Program.

Program objectives

Develop professionals who can:

1.

Perform successfully in the world of work by assuming increasing responsibilities in the areas of electrical engineering.

2.

Continue advanced studies in the areas of electrical engineering.

3.

Demonstrate commitment to continuous professional improvement in their areas of interest, including membership in professional societies.

Competencies Profile of Graduates

The program is designed to develop the skills that allow the student the ability to:

1. Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.

2. Apply engineering design to produce solutions that meet specific needs in public health, safety, and well-being, as well as global, cultural, social, environmental, and economic factors.

3. Communicate effectively with a variety of audiences.

4. Recognize ethical and professional responsibilities in engineering and make informed judgments that consider the impact of engineering solutions in the global, economic, environmental, and social context.

5. Perform effectively in a team whose members together exercise leadership, create a collaborative and inclusive environment, set goals, plan tasks, and meet objectives.

6. Develop and carry out adequate experimentation for analysis, data interpretation and engineering judgment to draw conclusions.

7. Acquire and apply new knowledge as necessary, through the use of appropriate learning strategies.

Retention Requirements of the Electrical Engineering Program

1. Comply with all Satisfactory Academic Progress norms established in the General Catalog.

2. Approve all major and prescribed distributives courses with a minimum grade of C.

Graduation Requirements

To complete their graduation requirements, all students should take and pass a simulated engineering foundational revalidation exam determined by the School of Engineering or the ELEN 4930 EIT Exam Seminar. In case of choosing to take the exam and not passing it, the student will have to enroll and pass the ELEN 4930 EIT Exam Seminar.

Note: Those students who provide evidence of having passed the foundational exam for the engineering revalidation offered by the National Council Examiners for Engineering and Surveying (NCEES) will be exempt from meeting this requirement.

Requirements for the Bachelor of Science Degree in Electrical Engineering

General Education Requirements	27 credits
Core Course Requirements	41 credits
Major Requirements	49 credits
Related Requirements	9 credits
Prescribed Distributive Requirements	12-18 credits
Elective Courses	3 credits
Total	141-147 credits

General Education Requirements - 27 credits

Twenty-seven (27) credits are required as explained below. Students of this Program are exempt from taking the GEMA 1200 course in the category of Basic Skills in Mathematics, GEIC 1010 Information and Computing and the course GEEC 2000 Entrepreneurial Culture in the Entrepreneurial Culture Category. They will only take the GEPE 4040 course in the Philosophical and Aesthetic Thought Category. In the Historical and Social Context Category, one of the following courses will be taken: GEHS 2010, 3020, 3050, or 4030. No courses will be taken in the Scientific and Technological Context Category or in the Category of Health and Quality of Life.

Core Requirements - 41 credits

ENGR 1100	Introduction to Engineering	3
ENGR 1200	Introduction to Sustainable Engineering	3
ENGR 2130	Introduction to Engineering Computing	3
ENGR 3300	Engineering Economics	3
CHEM 2115	General Chemistry for Engineers	4
MATH 1500	Precalculus	5
MATH 2251	Calculus I	5
MATH 2252	Calculus II	4
MATH 3350	Linear Algebra	3
PHYS 3311	Physics for Engineers I	4
PHYS 3312	Physics for Engineers II	4

Major Requirements - 49 credits

ELEN 3301	Electric Circuits I	4
ELEN 3302	Electric Circuits II	4
ELEN 3311	Electronics I	4
ELEN 3312	Electronics II	4
ELEN 3320	Logic Circuits	4
ELEN 3360	Applied Electromagnetics	4
ELEN 3430	Signals and Systems	3
ELEN 4020	Microcontrollers	3
ELEN 4327	Measurements and Instrumentation	4
ELEN 4351	Power Systems Analysis I	4
ELEN 4509	Control Systems	4
ELEN 4610	Analog and Digital Communications	4
ELEN 4810	Electrical and Computers Engineering Project Design	3

Related Requirements - 9 credits

ENGR 3200	Probability and Statistics	3
MATH 3250	Calculus III	3
MATH 3400	Differential Equations	3

Prescribed Distributive Requirements - 12-18 credits

A minimum of 12 credits are required from the following courses:

Courses related to Electronic Systems

ELEN 4410	Digital Systems Design	4
ELEN 4413	Analog Filter Design	4
ELEN 4414	Electronic Design	4
ELEN 4415	Power Electronics	4
COEN 4510	Computer Architecture	4
COEN 4535	Integrated Computer Systems	4

Courses related to Communication Systems - 12-18 credits

ELEN 4611	Microwave and Radio Frequency Engineering I	4
ELEN 4612	Microwave and Radio Frequency Engineering II	4
ELEN 4623	Optical Communications	3
ELEN 4614	Advanced Digital Communication	4
ELEN 4625	Digital Signal Processing	3
ELEN 4626	Design of Antennas	3
ELEN 4627	Data Communications Networks	3
ELEN 4618	Wireless and Cellular Communication	4

Courses related to Control Systems - 12-18 credits

ELEN 4513	Digital Control Systems	4
ELEN 4514	Robotics	4
ELEN 4535	Process Control	3
ELEN 4516	Computer Aided Control System Design	4
ELEN 4537	Neuronal Networks Applied to Control Systems	3
ELEN 4538	Automation	3

Courses related to Power Systems - 12-18 credits

ELEN 4352	Power Systems Analysis II	4
ELEN 4353	Electric Machines and Drives	4
ELEN 4375	Electrical Systems Design for Buildings	3
ELEN 4376	Industrial Power Systems Design	3
ELEN 4378	Distributed Generation	3
ELEN 4415	Power Electronics	4

Experience Outside the Classroom

Those students interested in expanding their knowledge in the area, obtaining practical and research experiences or preparing for the fundamental engineering revalidation exam, may take up to a maximum of six (6) additional credits among the group of previous courses or those of the following courses:

ELEN 4915	Electrical Engineering Practical Experience	3
ELEN 4921	Undergraduate Research in Electrical Engineering I	3
ELEN 4922	Undergraduate Research in Electrical Engineering II	3
ELEN 4930	EIT Exam Seminar	2

Minor in Communication Systems

For students from the Engineering Programs.

The Bayamón Campus is authorized to offer this minor.

Requirements for the Minor in Communication Systems - 24-27 credits

Courses for the Minor in Communication Systems

Only for students enrolled in Engineering Programs. Interested students will select 24-27 credits from the following courses:

ELEN 3302	Electric Circuits II	4
ELEN 3360	Applied Electromagnetics	4
ELEN 3430	Signals and Systems	3
ELEN 4610	Analog and Digital Communications	4
ELEN 4611	Microwave and Radio Frequency Engineering I	4
ELEN 4612	Microwave and Radio Frequency Engineering II	4
ELEN 4623	Optical Communications	3
ELEN 4614	Advanced Digital Communication	4
ELEN 4625	Digital Signal Processing	3
ELEN 4627	Data Communications Networks	3
ELEN 4618	Wireless and Cellular Communication	4
MATH 3250	Calculus III	3
MATH 3400	Differential Equations	3
ENGR 3365	Fundamentals of Electrical Engineering	3

Note: Students from Industrial Engineering, should take the courses ENGR 3365 and MATH 3400. The course ENGR 3365 does not apply to students of: Electrical Engineering, Mechanical Engineering or Computer Engineering. This course replaces the ELEN 3301 requirement of the ELEN 3302.

Minor in Electric Systems

For students from the Engineering Programs.

The Bayamón Campus is authorized to offer this minor.

Requirements for the Minor in Electric Systems - 24-27 credits

Courses for the Minor in Electric Systems

Students will select 24-27 credits from the following courses:

ELEN 3302	Electric Circuits II	4
ELEN 3311	Electronics I	4
ELEN 3312	Electronics II	4
ELEN 3320	Logic Circuits	4
ELEN 4020	Microcontrollers	3
ELEN 4410	Digital Systems Design	4
ELEN 4413	Analog Filter Design	4
ELEN 4414	Electronic Design	4
ELEN 4415	Power Electronics	4
COEN 4510	Computer Architecture	4
COEN 4535	Integrated Computer Systems	4
ENGR 3365	Fundamentals of Electrical Engineering	3
MATH 3400	Differential Equations	3

Note: Students from Industrial Engineering, should take the courses ENGR 3365 and MATH 3400. The course ENGR 3365 does not apply to students of: Electrical Engineering, Mechanical Engineering or Computer Engineering. This course replaces the ELEN 3301 requirement of the ELEN 3302.

Minor in Power and Energy Systems Engineering

For students from the Engineering Programs. Industrial Engineering students interested in this Minor must approve the ENGR 3365 course.

The Bayamón Campus is authorized to offer this minor.

Requirements for the Minor in Power and Energy Systems Engineering - 24 credits

Courses for the Minor in Power and Energy Systems Engineering

ELEN 3302	Electric Circuits II	4
ELEN 3311	Electronics I	4
ELEN 4351	Power Systems Analysis I	4
ELEN 4352	Power Systems Analysis II	4
ELEN 4353	Electric Machines and Drives	4
ELEN 4375	Electrical Systems Design for Buildings	3
ELEN 4376	Industrial Power Systems Design	3
ELEN 4378	Distributed Generation	3
ELEN 4415	Power Electronics	4
MECN 4240	Applied Solar Energy	3

Minor in Systems Engineering Control, Robotics and Automation

For students from the Engineering Programs.

The Bayamón Campus is authorized to offer this minor.

Requirements for the Minor in Systems Engineering Control, Robotics and Automation - 24-27 credits

Courses for the Minor in Systems Engineering Control, Robotics and Automation

Only for students enrolled in Engineering Programs. Interested students will select 24 credits from the following courses:

ELEN 3302	Electric Circuits II	4
ELEN 3311	Electronics I	4
ELEN 3312	Electronics II	4
ELEN 3430	Signals and Systems	3
ELEN 4509	Control Systems	4
ELEN 4513	Digital Control Systems	4
ELEN 4514	Robotics	4
ELEN 4535	Process Control	3
ELEN 4516	Computer Aided Control System Design	4
ELEN 4537	Neuronal Networks Applied to Control Systems	3
ELEN 4538	Automation	3
ENGR 3365	Fundamentals of Electrical Engineering	3
MATH 3400	Differential Equations	3

Note: Students from Industrial Engineering, should take the courses ENGR 3365 and MATH 3400. The course ENGR 3365 does not apply to students of: Electrical Engineering, Mechanical Engineering or Computer Engineering. This course replaces the ELEN 3301 requirement of the ELEN 3302.

Industrial Engineering (BS)

Industrial Engineering (BS)

The Bachelor of Science Degree in Industrial Engineering includes the study of systems composed of people, materials and equipment. Emphasis is given to the design, improvement and installation of these systems with the purpose of increasing productivity, profit and effectiveness. This Program aims to prepare students to practice professional engineering. This Program is accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET)" (www.abet.org).

The Bayamón Campus is authorized to offer this Program.

Program objectives

Develop professionals who can:

1. Apply the principles and methods of Industrial Engineering to propose solutions that improve the productivity of industries and organizations through the effective use of technology, effective communication, teamwork, and ethical performance.

2. Continue advanced studies in the areas of industrial engineering or related field.

3. Perform professionally based on continuous learning.

Competencies Profile of Graduates

The program is designed to develop the skills that allow the student the ability to:

1. Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.

2. Apply engineering design to produce solutions that meet specific needs with attention to public health, safety, and well-being, as well as global, cultural, social, environmental, and economic factors.

3. Communicate effectively with a variety of audiences.

4. Recognize ethical and professional responsibilities in engineering situations and make informed judgments that consider the impact of engineering solutions in the global, economic, environmental, and social context.

5. Perform effectively in a team whose members together exercise leadership, create a collaborative and inclusive environment, set goals, plan tasks, and meet objectives.

6. Develop and carry out adequate experimentation for analysis, data interpretation and engineering judgment to draw conclusions.

7. Acquire and apply new knowledge as necessary, through the use of appropriate learning strategies.

Retention Requirements

1. Meet all Academic Progress Requirements established in the General Catalog.

2. Pass all major and prescribed distributive courses with a minimum grade of C.

3. Have passed all prerequisite courses before taking continuation courses.

Graduation Requirements

To complete their graduation requirements, all students must take and pass a simulated fundamental engineering revalidation exam determined by the School of Engineering or the course INEN 4930 EIT Exam Seminar. In case of choosing to take the exam and not passing it, the student will have to enroll and pass the course INEN 4930 EIT Exam Seminar.

Note: Those students who provide evidence of having passed the fundamental examination of the engineering review offered by the National Council of Examiners for Engineering and Surveying (NCEES) will be exempt from meeting this requirement.

Requirements for the Bachelor of Science Degree in Industrial Engineering

General Education Requirements	27 credits
Core Course Requirements	41 credits
Related Requirements	3 credits
Major Requirements	51 credits
Prescribed Distributive Requirements	6-12 credits
Electives Courses	3 credits
Total	131-137 credits

General Education Requirements - 27 credits

Twenty-seven (27) credits are required as explained below. Students of this Program are exempt from taking the GEMA 1200 course in the category of Basic Skills in Mathematics, GEIC 1010 Information and Computing and the course GEEC 2000 Entrepreneurial Culture in the Entrepreneurial Culture Category. They will only take the GEPE 4040 course in the Philosophical and Aesthetic Thought Category. In the Historical and Social Context Category, one of the following courses will be taken: GEHS 2010, 3020, 3050, or 4030. No courses will be taken in the Scientific and Technological Context Category or in the Category of Health and Quality of Life.

Core Requirements - 41 credits

ENGR 1100	Introduction to Engineering	3
ENGR 1200	Introduction to Sustainable Engineering	3
ENGR 2130	Introduction to Engineering Computing	3
ENGR 3300	Engineering Economics	3
CHEM 2115	General Chemistry for Engineers	4
MATH 1500	Precalculus	5
MATH 2251	Calculus I	5
MATH 2252	Calculus II	4
MATH 3350	Linear Algebra	3
PHYS 3311	Physics for Engineers I	4
PHYS 3312	Physics for Engineers II	4

Related Requirements - 3 credits

ENGR 3200	Probability and Statistics	3

Major Requirements - 51 credits

INEN 3411	Operations Research I	3
INEN 3430	Advanced Statistics	3
INEN 3550	Cost Control and Analysis	3
INEN 3710	Work Measurement	4
INEN 4300	Statistical Quality Control	4
INEN 4400	Ergonomics and Design of Workstations	4
INEN 4420	Systems Simulation	4
INEN 4490	Operations Planning and Control	3
INEN 4511	Lean Six Sigma	4
INEN 4550	Facility Design	3
INEN 4560	Industrial Safety	3
INEN 4595	Project Management and Systems Engineering	4
INEN 4610	Services Optimization	3
INEN 4700	Design of Experiments	3
INEN 4810	Comprehensive Design Experience	3

Prescribed Distributive Requirements - 6-12 credits

A minimum of 6 credits are required from the following courses:

INEN 3412	Operations Research II	3
INEN 3600	Sustainable Engineering and Industrial Ecology	3
INEN 4510	Decision Making under Uncertainty	3
INEN 4512	Advanced Lean Six Sigma	3
INEN 4520	Systems Reliability	3
INEN 4530	Validation of Pharmaceutical Processes	3
INEN 4545	Supply Chain Management	3
INEN 4570	Stochastic Processes	3
INEN 4580	Resources Programming and Assignment	3
INEN 4600	Automated Manufacturing	3

Experience Outside the Classroom

The student interested in expanding their knowledge, obtain experiences of practice and research or prepare for the fundamental engineering revalidation exam, may take

up to a maximum of six (6) additional credits from the previous group of courses or the following courses:

INEN 4915	Practicum in Industrial Engineering	3
INEN 4921	Undergraduate Research in Industrial Engineering I	3
INEN 4922	Undergraduate Research in Industrial Engineering II	3
INEN 4930	EIT Exam Seminar	2

Minor in Logistics and Operations Research

For students of the Engineering Programs.

The Bayamón Campus is authorized to offer this Minor.

Requirements for the Minor in Logistics and Research of Operations - 25 credits

Courses for the Minor in Logistics and Research of Operations

INEN 3411	Operations Research I	3
INEN 3412	Operations Research II	3
INEN 3430	Advanced Statistics	3
INEN 4420	Systems Simulation	4
INEN 4490	Operations Planning and Control	3
INEN 4510	Decision Making under Uncertainty	3
INEN 4545	Supply Chain Management	3
INEN 4570	Stochastic Processes	3

Minor in Quality Systems

For students of the Engineering Programs.

The Bayamón Campus is authorized to offer this Minor.

Requirements for the Minor in Quality Systems - 27 credits

Courses for the Minor in Quality Systems

INEN 3430	Advanced Statistics	3
INEN 3710	Work Measurement	4
INEN 4300	Statistical Quality Control	4
INEN 4530	Validation of Pharmaceutical Processes	3
INEN 4511	Lean Six Sigma	4
INEN 4512	Advanced Lean Six Sigma	3
INEN 4700	Design of Experiments	3

Mechanical Engineering (BS)

Mechanical Engineering (BS)

The Bachelor of Science Program in Mechanical Engineering includes the study of transforming energy into a form that can be controlled and used for the production of goods and services. Emphasis is given to the analysis, design, instruction and control of equipment, instruments and mechanical systems. The Program aims to prepare students to practice mechanical engineering at the professional level. This Program is accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET)" (www.abet.org).

The Bayamón Campus is authorized to offer this Program.

Program objectives

Develop professionals who can:

1.

Perform successfully in the profession of mechanical engineering in the public or private sector applying engineering knowledge and technical skills with professionalism and ethical behavior.

2.

Participate adequately in teamwork environments, fostering collaborative leadership and using effective communication skills.

3.

Commit to the search for continuous learning.

Competencies Profile of Graduates

The program is designed to develop the competencies that allow the student the following abilities:

1. Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.

2. Apply engineering design to produce solutions that meet specific needs with attention to public health, safety, and well-being, as well as global, cultural, social, environmental, and economic factors.

3. Communicate effectively with a variety of audiences.

4. Recognize ethical and professional responsibilities in

engineering situations and make informed judgments, which must consider the impact of engineering solutions in the global, economic, environmental, and social context.

5. Perform effectively in a team whose members together exercise leadership, create a collaborative and inclusive environment, set goals, plan tasks, and meet objectives.

6. Develop and carry out adequate experimentation for analysis, data interpretation and engineering judgment to reach conclusions.

7. Acquire and apply new knowledge as necessary, through the use of appropriate learning strategies.

Retention Requirements

1. Meet all Academic Progress Requirements established in the General Catalog.

2. Pass all major and prescribed distributive courses with a minimum grade of C.

3. Have passed all prerequisite courses before taking continuation courses.

Academic Progress Requirements

1. Meet all Academic Progress Requirements established in the General Catalog.

2. Pass all major and prescribed distributive courses with a minimum grade of C.

3. Have passed all prerequisite courses before taking continuation courses.

Requirements for the Bachelor of Science Degree in Mechanical Engineering

General Education Requirements	27 credits
Core Course Requirements	41 credits
Related Requirements	12 credits
Major Requirements	52 credits
Prescribed Distributive Requirements	6-12 credits
Elective Courses	3 credits
Total	141-147 credits

General Education Requirements - 27 credits

Twenty-seven (27) credits are required as explained below. Students of this Program are exempt from taking the

GEMA 1200 course in the category of Basic Skills in Mathematics. GEIC 1010 Information and Computing and the course GEEC 2000 Entrepreneurial Culture in the Entrepreneurial Culture Category. They will only take the GEPE 4040 course in the Philosophical and Aesthetic Thought Category. In the Historical and Social Context Category, one of the following courses will be taken: GEHS 2010, 3020, 3050, or 4030. No courses will be taken in the Scientific and Technological Context Category or in the Category of Health and Quality of Life.

Core Requirements - 41 credits

ENGR 1100	Introduction to Engineering	3
ENGR 1200	Introduction to Sustainable Engineering	3
ENGR 2130	Introduction to Engineering Computing	3
ENGR 3300	Engineering Economics	3
CHEM 2115	General Chemistry for Engineers	4
MATH 1500	Precalculus	5
MATH 2251	Calculus I	5
MATH 2252	Calculus II	4
MATH 3350	Linear Algebra	3
PHYS 3311	Physics for Engineers I	4
PHYS 3312	Physics for Engineers II	4

Related Requirements - 12 credits

ENGR 2220	Computerized Engineering Graphics	3
ENGR 3365	Fundamentals of Electrical Engineering	3
MATH 3250	Calculus III	3
MATH 3400	Differential Equations	3

Major Requirements - 52 credits

MECN 3005	Vectorial Mechanics for Engineers: Statics	3
MECN 3010	Vectorial Mechanics for Engineers: Dynamics	3
MECN 3115	Fluid Mechanics and its Applications	3
MECN 3165	Solid Mechanics	3
MECN 3250	Manufacturing Process Laboratory	1
MECN 3500	Métodos Numéricos para Ingenieros	3
MECN 4105	Mechanical Vibrations	3
MECN 4110	Mechanisms Design	3
MECN 4121	Design of Machine Elements I	3
MECN 4122	Design of Machine Elements II	3
MECN 4201	Thermodynamics I	3
MECN 4202	Thermodynamics II	3

MECN 4210	Heat Transfer	3
MECN 4305	Engineering Materials	4
MECN 4405	Analysis in Computer Assisted Engineering	3
MECN 4610	Automatic Control Systems	3
MECN 4710	Fluid Mechanics and Thermal Science Laboratory	1
MECN 4720	Engineering Materials Material and Solid Mechanics Laboratory	1
MECN 4730	Instrumentation, Control and Vibrations Laboratory	1
MECN 4815	Project Design in Mechanical Engineering	3

Prescribed Distributive Requirements - 6-12 credits

A minimum of 6 credits are required from the following courses:

MECN 3140	Power Systems of Fluids	3
MECN 3160	Dynamics of Motor Vehicles	3
MECN 3200	Mechatronics	3
MECN 3350	Efficiency Airplane Design	3
MECN 3400	Analysis and Design of Space Missions	3
MECN 3600	Gas Turbines and Propulsion Systems	3
MECN 4220	Design of Thermal Systems	3
MECN 4230	Air Conditioning and Refrigeration	3
MECN 4235	Heating, Ventilation, and Air Conditioning Systems Design	3
MECN 4240	Applied Solar Energy	3
MECN 4350	Aerospace Structures and Materials	3
MECN 4620	Dynamics and Control of Aerospace Vehicles	3
MECN 4820	Aerospace Experience	3

Experience Outside the Classroom

Those students interested in expanding their knowledge in the area, obtaining practical and research experiences or preparing for the fundamental engineering revalidation exam, may take up to a maximum of six (6) additional credits among the group of previous courses or those of the following courses:

MECN 4911	Practice in Mechanical Engineering	3
MECN 4921	Undergraduate Research in Mechanical Engineering I	3
MECN 4922	Undergraduate Research in Mechanical Engineering II	3
MECN 4930	EIT Exam Seminar	2

Minor in Aerospace Engineering

The Bayamón Campus is authorized to offer this minor.

Requirements for the Minor in Aerospace Engineering - 18 credits

Select three (3) courses from the following:

MECN 397_	Specials Themes	3
MECN 4350	Aerospace Structures and Materials	3
MECN 4405	Analysis in Computer Assisted Engineering	3
MECN 4620	Dynamics and Control of Aerospace Vehicles	3
MECN 4820	Aerospace Experience Or	3
MECN 4921	Undergraduate Research in Mechanical Engineering I Or	3
MECN 4922	Undergraduate Research in Mechanical Engineering II	3

Courses for the Minor in Aerospace Engineering

MECN 3350	Efficiency Airplane Design	3
MECN 3400	Analysis and Design of Space Missions	3
MECN 3600	Gas Turbines and Propulsion Systems	3

Minor in Mechanical Engineering

Requirements for the in Mechanical Engineering - 18-20 credits

Courses for the Minor in Mechanical Engineering

This Minor if for students from other Engineering disciplines (i.e., Electrical, Computers, Industrial and Architectural) who wish to acquire knowledge of Mechanical Engineering. The structure of the minor is very flexible, allowing students to decide whether to delve into a particular area of Mechanical Engineering (i.e., Thermal Sciences, Controls, Design, CAD) or instead cover a broadly general areas.

Core Course

| MECN 3005 | Vectorial Mechanics for Engineers: Statics | 3 |

Select one course from

MECN 3165	Solid Mechanics	3
MECN 4201	Thermodynamics I	3
ENGR 3365	Fundamentals of Electrical	3

Engineering

Select 12 to 14 credits from

- ENGR 2220-Engineering Graphics

- AREN 2220-Architectural Engineering Graphics

- Major and distributive courses prescribed with MECN coding.

MECN courses under the classification of Experiences outside the classroom are excluded.

English (BA)

English (BA)

The Bachelor of Arts in English aims to develop competent professionals in the liberal arts, by offering them a solid base in English, as a discipline, in oral expression and writing as well as in the development of the skills of critical thinking. This bachelor's degree offers the opportunity for graduates to enter the work world in sectors such as government and private institutions, self-employment, among others, as well as the possibility of continuing graduate studies.

In addition, enable students to participate and contribute as responsible persons in our changing, global, heterogeneous and technologically challenging society.

The San Germán Campus is authorized to offer this Program.

Competencies Profile of Graduates

This Program is designed to develop the competencies in students in the following areas:

Knowledge

Demonstrate knowledge and understanding of:

1. the syntactic and morphological patterns of contemporary English and the process of acquisition of the linguistic systems of English.

2. the different methods used in academic research to be able to present the research results with validity and reliability.

3. the cultural diversity and richness of different traditions.

Skills

1. Strengthen the skills of writing, reading, research and critical analysis of literary and non-literary texts.

2. Apply the concepts of literature to daily life.

3. Develop a creative and imaginative ability to solve problems and the ability to be a critical and independent thinker.

4. Strengthen advanced writing and composition skills to write English correctly, achieving clear and logical arguments.

5. Strengthen advanced oral communication skills in English to achieve verbal argument clearly and logically.

6. Develop effective teamwork skills.

7. Use advanced technology and apply it in the professional area.

Attitudes

1. Value the importance of mastering English as a tool in the world of work and as a means of global communication.

2. Value the importance of English as part of a comprehensive education, which promotes the development of critical thinking, environmental awareness and social responsibility.

3. Show respect and acceptance of cultural and linguistic differences.

4. Recognize the importance of ethical professional conduct.

5. Recognize the importance of a world view through a holistic, multicultural and global lens.

Requirements for the Bachelor of Arts Degree in English

General Education Requirements	48 credits
Core Course Requirements	60 credits
Prescribed Distributive Requirements	9 credits
Elective Courses	3 credits
Total	120 credits

General Education Requirements - 48 credits

Forty-eight (48) credits are required as explained in the section "General Education Requirements for Bachelors'

Degrees." Students of this Program will take GEEN 2311, 2312 and 2313.

Note: GEEN 2311, 2312 and 2313 are required for admission to this Program.

Core Course Requirements - 60 credits

ENGL 3007	Advanced Writing	3
ENGL 3008	Critical Writing	3
ENGL 3073	Introduction to Linguistics	3
ENGL 3310	Public Speaking	3
ENGL 3320	Fundamental Structures of Grammar	3
ENGL 3325	Fundamentals of Phonetics	3
ENGL 3330	Comparative Analysis of English and Spanish	3
ENGL 3350	The Literary Genres	3
ENGL 3435	Puerto Rican Voices	3
ENGL 3500	Writing of Texts of Various Genres	3
ENGL 3510	Texts of the Popular Culture	3
ENGL 3520	Cross Cultural Studies	3
ENGL 4014	Modern Drama	3
ENGL 4030	Creative Writing	3
ENGL 4083	Worldwide English	3
ENGL 4100	Linguistics Issues	3
ENGL 4440	Caribbean Voices	3
ENGL 4500	Language and Power	3
ENGL 4799	Intensive Writing	3
ENGL 4800	Research in English	3

Prescribed Distributive Requirements - 9 credits

Nine (9) additional credits in English selected from the following courses, of which a minimum of six (6) credits in literature are required:

ENGL 2076	Reading and Writing of Technical Texts	3
ENGL 3025	Writing of Professional Documents	3
ENGL 3035	Proposal Writing	3
ENGL 3309	Communication Practices	3
ENGL 3400	Literature for Young Adults	3
ENGL 3410	North American Voices	3
ENGL 3420	Analysis of Selected Works of British Authors	3
ENGL 3430	Worldwide English Voices	3
ENGL 3440	Children's Literature	3
ENGL 3450	Analysis of Graphical Novels	3
ENGL 3700	Writing for Emerging Media	3
ENGL 3850	The Short Story	3
ENGL 3863	The Poetry	3
ENGL 4000	Shakespeare	3
ENGL 4015	Translation Workshop	3

ENGL 4073	Acquisition of English as a Second Language	3
ENGL 4400	The Novel	3
ENGL 4700	Literature Since 1945	3

Minor in Bilingual Oral and Written Communication

The San Germán Campus is authorized to offer this minor.

Requirements for the Minor in Bilingual Oral and Written Communication

Core Courses	18 credits
Prescribed Distributive Requirements	3 credits
Total	21 credits

Core Courses - 18 credits

ENGL 3007	Advanced Writing	3
ENGL 3025	Writing of Professional Documents	3
ENGL 3310	Public Speaking	3
SPAN 3015	Oral Communication	3
SPAN 3020	Writing Workshop	3
SPAN 3025	Writing of Professional Documents	3

Prescribed Distributive Requirements - 3 credits

ENGL 4015	Translation Workshop Or	3
SPAN 4015	Translation Workshop	3

Minor in Oral and Written Communication (English)

The San Germán Campus is authorized to offer this minor.

Requirements for the Minor in Oral and Written Communication

Core Courses	15 credits
Prescribed Distributive Requirements	3 credits
Total	18 credits

Core Courses - 15 credits

ENGL 2060	Conversation and Grammar Review	3
ENGL 2075	Technical Literature	3
ENGL 3007	Advanced Writing	3
ENGL 3025	Writing of Professional Documents	3
ENGL 3310	Public Speaking	3

Prescribed Distributive Requirements - 3 credits

An elective course in English at the 3000 or 4000 level.

Entrepreneurial and Managerial Development (BBA)

Entrepreneurial and Managerial Development (BBA)

The Entrepreneurial and Managerial Development Program provides an integrating disciplinary approach that offers students' knowledge about entrepreneurship and the role of management in the functioning of organizations. The program seeks to prepare professionals with the knowledge, skills, and attitudes in the areas of entrepreneurship and management, to start or manage various types of organizations, both locally and internationally.

Students must pass the required core and major courses with a minimum grade of C.

This Program, in the San Germán Campus, is accredited by the *International Assembly for Collegiate Business Education (IACBE)*, located on 11374 Strang Line Road, Lenexa, Kansas, USA.

This Program, in the Bayamón Campus, is accredited by the *Accreditation Council for Business Schools and Programs (ACBSP)* (https://www.acbsp.org/).

All campuses are authorized to offer this Program, including the University Center in Caguas from the Metropolitan Campus. In addition, the Bayamón Campus and the University Center in Caguas are authorized to offer this Program through online education.

Program goals

The program, among its goals, aspires to:

1.

Prepare professionals with knowledge in various disciplines to start, develop and manage an organization.

2.

Develop skills to create optimal solutions that help achieve organizational objectives and add economic and social value.

3.

Promote an ethical attitude and social responsibility in the context of local and international organizations.

Program objectives

The program has as objectives:

1.

Generate the knowledge to identify opportunities and develop innovative solutions to start, develop and manage an organization.

2.

Apply research techniques to select the various approaches and strategies in entrepreneurship and intra-entrepreneurship processes.

3.

Integrate ethical principles and social responsibility in decision-making.

Competencies Profile of Graduates

The Program is designed to develop the skills that allow the student to:

Knowledge

1.

Know from a holistic perspective, the nature, principles and operation of organizations and their impact on society and the economy.

2.

Know the principles, fundamental concepts and the multidimensional nature of the entrepreneurship process.

3.

Know the fundamental principles and concepts of administration and management.

4.

Know the various business and managerial strategies to achieve the goals and objectives of local and international organizations.

Abilities

1.

Apply critical and creative thinking in the organization's

communication processes.

2.

Apply the basic concepts of entrepreneurship, administration and management to promote the achievement of organizational objectives.

3.

Examine the challenges facing organizations and propose strategies to manage them.

4.

Design plans and projects to achieve organizational goals and objectives.

Attitudes

1.

Recognize the ethical principles and social responsibility in the operation of organizations.

2.

Recognize the importance and multidimensional impact of organizations and entrepreneurship as a transforming element in society and the economy.

3.

Value the importance of a mentality focused on the search for opportunities and continuous improvement.

Admission Requirements

The admission requirements for the Entrepreneurial and Managerial Practice or for Managerial Simulation are the following:

1. Have the approval of the Department Director or the Practice Coordinator.

2. Maintain a minimum index of 2.25 in the major.

3. Have approved courses ENTR 4400 and ACCT 1162.

4. Submit an official Graduation evaluation by the Registrar's Office.

NOTE: The selection of the internship center must be proven by the internship coordinator, who in turn will validate the processing of the documentation required by the Institution.

The Entrepreneurial and Managerial Supervised Practice

course can be validated for students who make such a request and have satisfactory fulfilled the established requirements. Such validation will be subject to the following requirements:

1. A formal request to the director of the Academic Department and the internship coordinator showing evidence of having worked full time without interruption for a minimum term of three (3) years in a company or in your own business within the three years immediately prior to the application date. Work performed must be in a supervisory managerial position or as an entrepreneur.

2. A portfolio in which their professional record is evidenced during the time of employment or business experience. Comply with all the requirements and processes established for the Validation of Learning Experiences according to the current General Catalog.

3. If the student's work experience was carried out in an organization or company, they must submit an official certification and letter from the employer or the Human Resources Office of the place of employment that specifies the following:

   a. Years of experience.

   b. Period of time in which he was employed.

   c. Position or positions occupied.

   d. Description of tasks.

   e. Copies of the evaluations received.

   f. Any other evidence of their professional performance during the time of employment.

4. If the student's experience is as a business owner, he must submit and present all the current documentation, which is detailed below:

   a. Certification of Incorporation of the company.

   b. Merchant Registration.

   c. Registration for the Sales and Use Tax (IVU).

   d. Municipal License.

   e. Commercial Use Permit

   f. Licenses required to operate the business.

Requirements for the Bachelor of Business

Administration Degree in Entrepreneurial and Managerial Development

General Education Requirements	48 credits
Core Course Requirements	47 credits
Major Requirements	24 credits
Elective Courses	3 credits
Total	122 credits

General Education Requirements - 48 credits

Forty-eight (48) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees." Students in this Program will take GEMA 1200 in the Basic Mathematical Skills category.

Core Course Requirements - 47 credits

ACCT 1161	Introduction to Financial Accounting	4
ACCT 1162	Introduction to Managerial Accounting	4
BADM 1900	Fundamentals of Business Management	3
BADM 3313	The Law and The Businesses	3
BADM 3900	Information Systems in Organizations	3
FINA 2101	Corporate Finance I	3
INTB 2100	Introduction to International Business	3
MAEC 2140	Fundamentals of Quantitative Methods	3
MAEC 2211	Principles of Microeconomics	3
MAEC 2212	Principles of Macroeconomics	3
MAEC 2221	Basic Statistics	3
MAEC 2222	Managerial Statistics	3
MKTG 1210	Introduction to Marketing	3
OMSY 3030	Business Communication in Spanish Or	3
OMSY 3040	Business Communication in English	3
OPMS 3000	Operations Management of Manufacturing and Service	3

Major Requirements - 24 credits

BADM 3330	Human Resources Management	3
BADM 4340	Protective Labor Legislation	3
ENTR 2100	Organizations: Dynamics and Evolution	3
ENTR 2200	Foundations of Entrepreneurship	3
ENTR 3900	Entrepreneurial and Managerial Strategies	3
ENTR 4400	Design and Development of a Business Plan	3
ENTR 2300	Innovation and Entrepreneurship	3
ENTR 3900	Entrepreneurial and Managerial Strategies	3
ENTR 4100	Digital Entrepreneurship	3
ENTR 4400	Design and Development of a Business Plan	3
ENTR 4910	Entrepreneurial and Managerial Supervised Practicum Or	3
ENTR 4930	Entrepreneurial or Managerial Integrated Project	3

Additional Notes:

1. The selection of the practice center must be validated by the professor, as well as the procedure for submitting the documentation required by the Institution.

2. Satisfactory work experience may be validated for practice (ENTR 4910) for students, who request it in writing to the director of the academic department. This confirmation will be subject to whether:

   a. The student has been working full-time for a minimum period of two consecutive years in a company within three years immediately prior to the date of the request.

   b. The student submits a certification and letter from the employer or the Office of Human Resources of the work place that specifies:

   i. Years of experience.

   ii. Period of time in which he was employed.

   iii.   Position or positions occupied.

   iiii.   Description of tasks.

   iiiii.   Copies of the evaluations received.

   iiiiii. Any other evidence of his professional

performance during the time of employment.

Strategy

Minor in Electronic Commerce

The minor in Electronic Commerce aims to prepare students so that they may apply the basic concepts of electronic commerce and their function within the globalized economy. The student will identify the uses of Internet for businesses in national and international markets.

The Aguadilla and Metropolitan campuses are authorized to offer this Program.

Requirements for the Minor in Electronic Commerce - 27 credits

Courses for the Minor in Electronic Commerce

ECOM 1210	Introduction to Electronic Commerce	3
ECOM 2301	Electronic Commerce Technical Infrastructure I	3
ECOM 2302	Electronic Commerce Technical Infrastructure II	3
BADM 1900	Fundamentals of Business Management	3
ITEC 1200	Programming Algorithms	3
ITEC 2450	Development of Web Page	3
MKTG 1210	Introduction to Marketing	3
MKTG 2220	Marketing Management	3
MKTG 2223	Consumer Behavior	3

Minor in International Business

The Arecibo Campus is authorized to offer this minor through face-to-face education.

Requirements for the Minor in International Business - 18 credits

Courses for the Minor in International Business

INTB 2100	Introduction to International Business	3
INTB 2200	Cultural Awareness in International Business	3
INTB 2301	Principles of Imports and Exports	3
INTB 3330	Management of Human Resources at the International Level	3
INTB 3600	International Business Environment in the Americas, Europe and the Pacific	3
INTB 4220	International Business	3

Minor in Entrepreneurship

The Minor in Entrepreneurship offers students, of different academic disciplines, the opportunity to obtain fundamental knowledge in leadership, resource management and development of the team work that complements specialized knowledge. It likewise allows students to become a more overall professional.

The Metropolitan Campus is authorized to offer this minor.

Requirements for the Minor in Entrepreneurship - 19 credits

Courses for the Minor in Entrepreneurship

ACCT 1161	Introduction to Financial Accounting	4
BADM 1900	Fundamentals of Business Management	3
ENTR 2200	Foundations of Entrepreneurship	3
ENTR 2212	Social Entrepreneurism	3
MKTG 1210	Introduction to Marketing	3
SBAD 3330	Human Resources Administration in Small Businesses	3

Minor in Entrepreneurial and Managerial Development

The Minor in Entrepreneurial and Managerial development allows students from any area of study to develop an enterprise mentality and the basic skills to establish their own company and administer a business effectively. It exposes students to the foundations of management, accounting, finance, statistics, economics and marketing, necessary to develop and administer a company successfully.

All campuses are authorized to offer this minor. The Barranquitas and Bayamon campuses and the University Center in Caguas are authorized to offer this minor through distance education.

Requirements for the Minor in Entrepreneurial and Managerial Development - 25 credits

Courses for the Minor in Entrepreneurial and Managerial Development

ACCT 1161	Introduction to Financial Accounting	4
BADM 1900	Fundamentals of Business	3

	Management	
HRMA 2100	Human Resource Administration	3
BADM 3900	Information Systems in Organizations	3
ENTR 2200	Foundations of Entrepreneurship	3
ENTR 3900	Entrepreneurial and Managerial Strategies	3
ENTR 4400	Design and Development of a Business Plan Or	3
MAEC 2211	Principles of Microeconomics	3
MKTG 1210	Introduction to Marketing	3

Minor in Music Business Management

The Minor in Music Business Management aims to develop the following competencies in graduates: to distinguish the music enterprise models, to apply music marketing methods and the basic concepts for the administration of artists, as well as to identify the legal principles and contracts related to the industry.

The Metropolitan Campus is authorized to offer this minor.

Requirements for the Minor in Music Business Management - 18 credits

Courses for the Minor in Music Business Management

ENTR 2200	Foundations of Entrepreneurship	3
MKTG 1210	Introduction to Marketing	3
MUBA 1000	Introduction to Business in the Music Industry	3
MUBA 1100	Music Marketing	3
MUBA 1200	Principles of Management of Artists	3
MUBA 1400	Legal Aspects in The Music Business	3

Minor in Public Management

The minor in Public Management enables the future professional to take part in decision-making that is carried out in public organizations.

The Metropolitan Campus is authorized to offer this Program.

Requirements for the Minor in Public Management - 24 credits

Courses for the Minor in Public Management

BADM 1900	Fundamentals of Business Management	3
HRMA 2100	Human Resource Administration	3
HRMA 3100	Leadership and Supervision	3
BADM 3570	Administrative Auditing	3
BADM 4190	Accountability in The Public Sector	3
POLS 2088	Government of the Commonwealth of Puerto Rico	3
PUAD 3300	Government Accounting	3
PUAD 3510	Public Budget Planning	3

Entrepreneurial Development (Post Associate Degree Professional Certificate)

The Post Associate Degree Professional Certificate in Entrepreneurial Development provides the theoretical and practical foundation for the establishment, administration and development of a company of global dimensions. It promotes development in various areas, such as: the idea, planning, administration, marketing, accounting, ethics and technology. Develops professionals qualified in the critical evaluation of project needs, the use of technology in a local and international frame, considering the diverse factors such as the economy, ethics and globalized culture.

Nonconventional educational methods will be used, as well as the traditional modalities or classroom courses.

The Ponce Campus is authorized to offer this Certificate. It is also authorized to offer this Certificate through online education.

Admission Requirements

To be admitted, students must:

1. Have at least an associate degree from an accredited educational institution.

2. Comply with the University's admissions requirements.

Certification Requirements

In order to fulfill the Certification Requirements of Inter American University of Puerto Rico students must:

1. Complete the Certificate Requirements.

2. Obtain a minimum general average of 2.00 points.

Requirements for the Post Associate Degree Professional Certificate in Entrepreneurial Development

Core Course Requirements - 12 credits

ENDE 1100	Introduction to Entrepreneurial Development	2
ENDE 3315	Fundamental Procedures for Establishing A Business	3
ENDE 3316	Business Management	3
ENDE 3320	Electronic Commerce in Enterprise Development	4

Environmental Sciences (BS)

Environmental Sciences (BS)

The Bachelor of Science Degree in Environmental Sciences is directed to those persons interested in working as professionals in the area of the environmental science in pollution control in water, soil and air, and in the conservation of land and water natural resources. It aims to provide students with the necessary skills to perform in these two environmental areas in government as well as in private business or industry. The Program offers knowledge on its legal basis and gives training in methodology skills and techniques. Emphasis will be placed on the perception of nature as a system. To receive the Bachelor of Science Degree in Environmental Sciences, students must pass the internship with a minimum grade of C.

The Aguadilla, Barranquitas, and Ponce campuses are authorized to offer this Program.

Requirements for the Bachelor of Science Degree in Environmental Sciences

General Education Requirements	45 credits
Major Requirements	74 credits
Elective Courses	3 credits
Total	122 credits

General Education Requirements - 45 credits

Forty-five (45) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees." Students will take the course GEMA 1200 in the Basic Skills in Mathematics category. Students of this program are exempt from taking courses in the Scientific and Technological Context category.

Major Requirements - 74 credits

EVSC 1110	Introduction to Environmental Sciences	3
EVSC 2500	Quality of Air	2
EVSC 3600	Waste Management	3
EVSC 3603	Health and Occupational Safety in Environmental Protection	3
EVSC 4504	Use, Conservation and Quality of Water	3
EVSC 4955	Integration Seminar in Environmental Sciences	1
BIOL 1101	General Biology I	3
BIOL 1102	General Biology II	3
BIOL 1103	Biology Skills Laboratory I	1
BIOL 1104	Biology Skills Laboratory II	1
BIOL 2103	Zoology	3
BIOL 2104	Botany	3
BIOL 2153	Biostatistics	3
BIOL 3105	General Microbiology	4
BIOL 3503	Ecology	3
BIOL 3504	Environmental Health	3
BIOL 3505	Environmental Laws, Policies and Regulations	3
BIOL 4503	Conservation and Management Of Natural Resources	3
CHEM 1111	General Chemistry I	4
CHEM 2212	General Chemistry II	4
CHEM 3320	Analytical Chemistry	4
MATH 1511	Precalculus I	3
MATH 1512	Precalculus II	3
PHYS 3001	General Physics I	4
PHYS 3002	General Physics II	4

Minor in Environmental Science

Students majoring in Biology, Microbiology, Biotechnology and Biomedical Sciences may opt for the Minor in Environmental Science upon approving the courses listed below.

The Aguadilla, Barranquitas, and Ponce campuses are authorized to offer this minor.

Requirements for the Minor in Environmental Science - 18 credits

Courses for the Minor in Environmental Science

EVSC 1110	Introduction to Environmental Sciences	3
EVSC 2500	Quality of Air	2
EVSC 3001	Management and Conservation of Natural Resources	4

EVSC 3600	Waste Management	3
BIOL 3504	Environmental Health	3
BIOL 3505	Environmental Laws, Policies and Regulations	3

Environmental Technology (BS)

The Bachelor of Science in Environmental Technology includes an interdisciplinary curriculum. It aspires to develop environmental technologists with the necessary skills for their professional development in fields related to environmental public policy and related agencies. It provides students with the fundamental knowledge and skills related to the sampling and analysis of environmental contaminants, environmental laws and regulations, and environmental assessment processes.

The San Germán Campus is authorized to offer this Program.

Competencies Profile of Graduates

This Program is designed to develop the competencies that will enable students to:

Knowledge:

1. Define chemical concepts related to Environmental Chemistry, sources of contamination and the effects on air, land and water, as well as on human health.

2. List the principles and safe practices for handling hazardous substances.

3. Describe the characteristics of environmental hazards.

4. Identify the impact of environmental pollution on human health and natural ecosystems.

5. Describe strategies for environmental planning and protection.

6. Demonstrate knowledge and understanding of the laws, rights and related agencies, included in the public policy on the environmental field.

Abilities:

1. Analyze the fundamental principles that describe a healthy and balanced environment.

2. Evaluate sources of contamination, their reactions, transport and effect on air, land and water, as well as on human health.

3. Apply laws that are related to the environment.

4. Evaluate the legal aspects for the control and solution of controversies that interfere or are related to the Environmental Public Policy of Puerto Rico.

5. Effectively use databases and related literature to search for scientific information.

Attitudes:

1. Stimulate critical, analytical and scientific reasoning as a tool to control environmental deterioration and planned development.

2. Promote appreciation for the importance of the environment in our lives.

3. Collaborate in the elaboration of regulations and laws that guarantee the protection of the environment and human health.

4. Promote the combination of ethical-moral values and scientific principles to collaborate in the development of society and the preservation of the environment.

5. Recognize the benefit of available scientific information on environmental studies.

6. Recognize the importance of scientific research in environmental evaluation and preservation.

7. Demonstrate a positive attitude towards self-learning and updating in their discipline.

8. Value teamwork.

9. Demonstrate responsibility and ethical-legal commitment in the exercise of their profession.

Graduation requirement

1.

Approve with a minimum grade of C all concentration courses.

Requirements for the Bachelor of Science Degree in Environmental Technology

General Education Requirements	45 credits
Major Requirements	73 credits
Prescribed Distributive Requirements	6-9 credits
Elective Courses	3 credits
Total	127-130 credits

General Education Requirements - 45 credits

Forty-five (45) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees." Students will take the course GEMA 1200 in the Basic Skills in Mathematics category. Students of this Program are exempt from taking courses GEST 2020 or 2030 from the Scientific and Technological Context category.

Major Requirements - 73 credits

EVTH 3010	Environmental Public Policy	3
EVTH 4020	Environmental Evaluation	3
EVTH 4910	Internship	3
EVTH 4960	Integration Seminar	1
BIOL 1101	General Biology I	3
BIOL 1102	General Biology II	3
BIOL 1103	Biology Skills Laboratory I	1
BIOL 2103	Zoology	3
BIOL 2104	Botany	3
BIOL 1104	Biology Skills Laboratory II	1
BIOL 2153	Biostatistics	3
BIOL 3105	General Microbiology	4
BIOL 3503	Ecology	3
CHEM 1111	General Chemistry I	4
CHEM 2212	General Chemistry II	4
CHEM 2221	Organic Chemistry I	4
CHEM 2222	Organic Chemistry II	4
CHEM 3000	Environmental Chemistry	3
CHEM 3320	Analytical Chemistry	4
MATH 1500	Precalculus	5
PHYS 3001	General Physics I	4
PHYS 3002	General Physics II	4
ELEC 1120	Industrial Safety	3

Prescribed Distributive Requirements - 6 - 9 credits

The student can choose a minimum of 6 credits and a maximum of 9 from the following options: (2 courses)

EVTH 397_	Special Topics	3
BIOL 3504	Environmental Health	3
BIOL 3904	Toxicology	3
BIOL 4433	Industrial Microbiology	3
BIOL 4503	Conservation and Management Of Natural Resources	3
BIOL 4953	Research Methods	3
CHEM 3360	Food Chemistry	3
CHEM 3370	Green Chemistry	3
CHEM 4003	Industrial Chemistry	3
CHEM 4220	Biochemistry	4
MATH 2251	Calculus I	5

Finance (BBA)

Finance (BBA)

The Bachelor of Business Administration (BBA) in Finance aims to prepare students to understand, analyze and apply the principles that govern financial activities in the local, national and global context.

The Program trains the student to use instruments of analysis in solving problems and in formulating decisions in the areas of corporate finances, public finances, insurance, real estate, banking and investment.

Students must pass the required core and major courses with a minimum grade of C.

This Program, in the San Germán Campus, is accredited by the *International Assembly for Collegiate Business Education (IACBE)*, located on 11374 Strang Line Road, Lenexa, Kansas, USA.

This Program, in the Bayamón Campus, is accredited by the *Accreditation Council for Business Schools and Programs (ACBSP)* (https://www.acbsp.org/).

The Bayamón, Metropolitan, Ponce and San Germán campuses are authorized to offer this Program. The Ponce Campus is authorized to offer this Program through online education.

Competencies Profile of Graduates

The Program is designed to develop the competences that allow the student to:

Knowledge

Demonstrate knowledge and understanding:

1. of the decisions of the financial regulators and the government fiscal policies to stabilize the economy and how these affect the company or business where they work.

2. of the processes related to the stock markets and the

possible causes of volatility.

3. trends in financial markets and regulations and decisions of the government sector.

Skills

1. Apply knowledge of finance regarding the best use of financial resources and assets of the company to achieve the highest profitability of the business.

2. Apply mathematical formulas that facilitate decision-making about the best use of money and investment projects.

3. Use electronic means to calculate and evaluate financial indicators.

4. Develop financial strategies to maximize returns on investments.

5. Analyze financial data of the company and compare them with those of the sector or industry to which they belong while evaluating its competitive position and its possibilities of growth.

Attitudes

1. Recognize the importance of the interrelation that exists between their functions and those of their colleagues within the company.

2. Demonstrate an attitude of trustworthiness, honesty, responsibility, and discretion in the handling of financial matters assigned to them.

3. Maintain cordial relations with their co-workers, superiors, suppliers, and clients.

Requirements for the Bachelor of Business Administration Degree in Finance

General Education Requirements	48 credits
Core Course Requirements	41 credits
Major Requirements	27 credits
Prescribed Distributive Requirements	6 credits
Elective Courses	3 credits
Total	125 credits

General Education Requirements - 48 credits

Forty-eight (48) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees." Students in this Program will take GEMA 1200

in the Basic Mathematical Skills category.

Core Course Requirements - 41 credits

ACCT 1161	Introduction to Financial Accounting	4
ACCT 1162	Introduction to Managerial Accounting	4
BADM 1900	Fundamentals of Business Management	3
BADM 3900	Information Systems in Organizations	3
BADM 4300	Managerial Economics	3
FINA 2101	Corporate Finance I	3
MAEC 2140	Fundamentals of Quantitative Methods	3
MAEC 2211	Principles of Microeconomics	3
MAEC 2212	Principles of Macroeconomics	3
MAEC 2221	Basic Statistics	3
MAEC 2222	Managerial Statistics	3
MKTG 1210	Introduction to Marketing	3
OMSY 3030	Business Communication in Spanish Or	3
OMSY 3040	Business Communication in English	3

Major Requirements - 27 credits

FINA 1000	Ethics in Finance	3
FINA 2102	Corporate Finance II	3
FINA 3130	Credit Risk Management	3
FINA 3150	Personal Finance	3
FINA 3235	Money and Banking	3
FINA 3300	Financial Markets	3
FINA 3700	Fundamentals of Investment	3
FINA 4100	International Finance	3
FINA 4970	Seminar in Finance	3

Prescribed Distributive Requirements - 6 credits

Select two of the following courses:

FINA 2150	Electronic Spreadsheet in Finance	3
FINA 3400	Introduction to Risk and Insurance	3
FINA 3500	Introduction to Real Estate	3
FINA 4910	Practicum in Finance	3
BADM 3313	The Law and The Businesses	3
MAEC 3236	Public Finance and Fiscal Policy	3
MAEC 3240	Mathematics for Decision-Making	3
MAEC 3243	International Economics	3
POLS 3150	Introduction to International	3

	Relations	
REAL 2500	Real Estate Economics	3
REAL 2600	Legal Principles of Real Estate	3

Minor in Finance

For students of Business Administration programs.

The Bayamón, Metropolitan, Ponce and San Germán campuses are authorized to offer this minor.

Requirements for the Minor in Finance - 21 credits

Courses for the Minor in Finance

FINA 2101	Corporate Finance I	3
FINA 2101	Corporate Finance I	3
FINA 3150	Personal Finance	3
FINA 3235	Money and Banking	3
FINA 3300	Financial Markets	3
FINA 3700	Fundamentals of Investment	3
FINA 4100	International Finance	3

Minor in Insurance

The Minor in Insurance aims to develop graduates with the capacity to distinguish between the alternatives to protect goods and the wealth of people and companies, in the public as well as in the private sectors, so will enable them to develop and offer risk administration mechanisms.

The Metropolitan Campus is authorized to offer this minor.

Requirements for the Minor in Insurance - 18 credits

Courses for the Minor in Insurance

INSR 1400	Introduction to Risk and Insurance	3
INSR 1500	Introduction to Disability Life Insurance	3
INSR 1600	Life Insurance	3
INSR 1700	Employee Benefits Planning	3
INSR 1800	Personal Uses for Multilinear Insurance	3
INSR 1900	Commercial Uses and Functional and Operational Aspects of Multilinear Insurance	3

Minor in Real Estate

This minor is intended for students of Bachelor of Business Administration in Finance program.

The Ponce Campus is authorized to offer this minor

through online education.

Requirements for the Minor in Real Estate - 21 credits

Courses for the Minor in Real Estate

REAL 2500	Real Estate Economics	3
REAL 2600	Legal Principles of Real Estate	3
FINA 2101	Corporate Finance I	3
FINA 3130	Credit Risk Management	3
FINA 3150	Personal Finance	3
FINA 3235	Money and Banking	3
FINA 3500	Introduction to Real Estate	3

Fine Arts (BFA)

Fine Arts (BFA)

Well thought study of the development of the arts, its conception and creation to be appreciated as a vehicle for the expression of the human being, allowing society to examine, express, and evaluate itself. The arts, as the mirror of society, is the expression of its culture and identity and links it with its ethical and historical roots.

The Bachelor of Arts (BA) in Fine Arts aspires to create a professional within the disciplines of the plastic arts that contributes to the development of the arts and the quality of life in general. The degree of Bachelor of Arts in Fine Arts offers majors in Ceramics, Drawing, Sculpture, Photography, Printmaking, Painting, and Teaching Art.

The courses of the program are aimed at the development of the student's artistic abilities so that they reach their technical and conceptual potential in their execution of plastic artworks. Accordingly, the courses offer the technical knowledge of each discipline as well as a historical and conceptual basis for the professional and personal development of the student/artist.

The San Germán Campus is authorized to offer this Program.

Competencies Profile of Graduates of the Bachelor of Arts in Fine Arts

The Program is designed to develop the professional and technical competencies that will enable the student to:

Knowledge

1. Know the theories of art, elements, and principles that structure the work of art.

2. Identify the techniques relevant to the particular study

medium and its plastic qualities for artistic expression.

Skills

1. Handle the plastic media, tools, materials and equipment for the creation of plastic work.

2. Decide the applicable theories in the analysis of the artistic work.

3. Evaluate the work of art in its formal and conceptual aspects.

4. Analyze decisions about the appropriate technique for artistic creation.

5. Apply the latest technology, particularly the computer, in the production of the artistic work.

Attitudes

1. Critically appreciate the conceptual components of works of art.

2. Value an artistic work in the context of the place, time, and space in which it is made.

Competencies Profile of Graduates of Major in Ceramics

Knowledge:
Know the techniques to create artistic work in ceramics.

Skills:
Develop works of art using the techniques in ceramics.

Attitudes:
Respect the canons of the discipline of ceramics.

Competencies Profile of Graduates of Major in Drawing

Knowledge:
Know the techniques to create artistic work in drawing.

Skills:
Develop works of art using drawing techniques.

Attitudes:
Respect the canons of the discipline of drawing.

Competencies Profile of Graduates of Major in Sculpture

Knowledge:

Know the techniques to create artistic work in sculpture.

Skills:
Develop works of art using sculpture techniques.

Attitudes:
Respect the canons of the discipline of sculpture.

Competencies Profile of Graduates of Major in Photography

Knowledge:
Know the techniques to create artistic work in photography.

Skills:
Develop works of art using the techniques of photography.

Attitudes:
Respect the canons of the discipline of photography.

Competencies Profile of Graduates of Major in Printmaking

Knowledge:
Know the engraving techniques to create artistic work.

Skills:
Develop works of art using engraving techniques.

Attitudes:
Respect the canons of the discipline of printmaking.

Competencies Profile of Graduates of Major in Painting

Knowledge:
Know the techniques to create artistic work in painting.

Skills:
Develop works of art using the techniques of painting.

Attitudes:
Respect the canons of the discipline of painting.

Competencies Profile of Graduates of Major in Teaching Art

Knowledge

1. Know the methodology in teaching art.

2. Know the techniques and fundamental concepts that make up the plastic arts and the historical and philosophical framework of art education.

Skills

1. Handle plastic media, tools, materials, and equipment necessary for the execution of plastic works.

2. Apply technology in the field of education and the plastic arts.

3. Use the appropriate evaluation and assessment processes for works of art.

Attitudes

1. Value the work of art in its formal and conceptual aspects in the teaching of art.

2. Promote respect and appreciation for the plastic arts.

Graduation Requirements

In addition to complying with the general graduation requirements established in this Catalog, students must:

1. Participate in four (4) collective or individual exhibitions in art galleries or museums in or outside the country, in the two years prior to graduation and provide the Art Program catalogs of the sample as evidence.

2. Participate in the Collective Graduate Students' Exhibition organized by the Campus' Art Program in their last year of study.

Requirements for the Bachelor of Arts in Fine Arts

For the majors in Ceramics, Drawing, Sculpture, Photography, Printmaking, and Painting:

General Education Requirements	48 credits
Core Course Requirements	42 credits
Major Requirements	15 credits
Prescribed Distributed Requirements	9 credits
Elective Courses	6 credits
Total	120 credits

For the major in Teaching of Art:

General Education Requirements	54 credits
Core Course Requirements	39 credits
Major Requirements	46 credits
Elective Courses	3 credits
Total	142 credits

General Education Requirements - 48-54 credits

For the majors in Ceramics, Drawing, Sculpture, Photography, Printmaking, and Painting:

Forty-eight (48) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees."

For the major in Teaching Art:

Fifty-four (54) credits of General Education Requirements are required for this mayor. In addition to GEHS 2010, students will take GEHS 3020, 4020, and 4030 from the Historical and Social Context category.

Core Course Requirements - Ceramics, Drawing, Sculpture, Photography, Printmaking, and Painting - 42 credits

ARTS 1102	Technical Foundations and Drawing Practice	4
ARTS 1104	Design	3
ARTS 1106	Three-Dimensional Design	3
ARTS 1300	Introduction to Pottery	4
ARTS 1541	Digital Photography	3
ARTS 2040	Drawing	3
ARTS 2250	Painting I	4
ARTS 2355	Introduction to The Graphic Arts	3
ARTS 2403	History of Art	3
ARTS 3403	History of Modern and Contemporary Art	3
ARTS 3405	History of Puerto Rican Art	3
ARTS 3415	History of Latin American And Caribbean Art	3

Select three (3) credits form the following courses:

ARTS 2406	Art Masterpieces	3
ARTS 3360	Art and Technology	3
ARTS 3407	Gender, Representation and the Visual Arts	3

Core Course Requirements Teaching Art - 39 credits

ARTS 1100	Color Theory	3
ARTS 1102	Technical Foundations and Drawing Practice	4

ARTS 1104	Design	3
ARTS 1106	Three-Dimensional Design	3
ARTS 1300	Introduction to Pottery	4
ARTS 1541	Digital Photography	3
ARTS 2040	Drawing	3
ARTS 2250	Painting I	4
ARTS 2355	Introduction to The Graphic Arts	3
ARTS 2403	History of Art	3
ARTS 3403	History of Modern and Contemporary Art	3
ARTS 3405	History of Puerto Rican Art	3

Major Requirements

Ceramics (BFA)

Requirements for Ceramics

Major Courses - 15 credits

ARTS 2260	Relief Sculpture	3
ARTS 2300	Functional Pottery	3
ARTS 3303	Sculptural Ceramics	3
ARTS 3305	Figurative Ceramics	3
ARTS 4303	Clays and Glazes	3

Prescribed Distributed Requirements for the Major in Ceramics - 9 credits

Select nine (9) credits form the following courses:

ARTS 1100	Color Theory	3
ARTS 3004	Arts of The Book	3
ARTS 3150	Drawing II - Figure	3
ARTS 4202	Airbrush	3
ARTS 4251	Assemblage	3
ARTS 4254	Metal Sculpture	3
ARTS 4360	Digital Art	3
ARTS 4365	Computerized Graphic Design	3

Drawing (BFA)

Requirements for Drawing

Major Courses - 15 credits

ARTS 2060	Drawing in Fluid Media	3
ARTS 2061	Drawing on Abrasive Media	3
ARTS 2062	Color Drawing	3
ARTS 3150	Drawing II - Figure	3
ARTS 4150	Advanced Drawing	3

Prescribed Distributed Requirements for the Major in Drawing - 9 credits

Select nine (9) credits form the following courses:

ARTS 1100	Color Theory	3

ARTS 3004	Arts of The Book	3
ARTS 4202	Airbrush	3
ARTS 4353	Lithography	3
ARTS 4360	Digital Art	3
ARTS 4365	Computerized Graphic Design	3

Sculpture (BFA)

Requirements for Sculpture

Major Courses - 15 credits

ARTS 2260	Relief Sculpture	3
ARTS 3250	Wood Carving Sculpture	3
ARTS 4251	Assemblage	3
ARTS 4254	Metal Sculpture	3
ARTS 4256	Sculpture - The Human Figure	3

Prescribed Distributed Requirements for the Major in Sculpture - 9 credits

Select nine (9) credits form the following courses:

ARTS 1100	Color Theory	3
ARTS 2300	Functional Pottery	3
ARTS 3004	Arts of The Book	3
ARTS 3150	Drawing II - Figure	3
ARTS 3303	Sculptural Ceramics	3
ARTS 3305	Figurative Ceramics	3
ARTS 4202	Airbrush	3
ARTS 4303	Clays and Glazes	3
ARTS 4360	Digital Art	3
ARTS 4365	Computerized Graphic Design	3

Photography (BFA)

Requirements for Photography

Major Courses - 15 credits

ARTS 2306	History of Photography	3
ARTS 2600	Black and White Photography	3
ARTS 3410	Lighting	3
ARTS 3450	Color Photography	3
ARTS 3660	Documentary or Social Photography	3

Prescribed Distributed Requirements for the Major in Photography - 9 credits

Select nine (9) credits form the following courses:

ARTS 1100	Color Theory	3
ARTS 3004	Arts of The Book	3
ARTS 3662	Figure Photography	3
ARTS 4202	Airbrush	3
ARTS 4355	Photo Serigraphy	3
ARTS 4360	Digital Art	3

Painting (BFA)

Requirements for Painting

Major Courses - 15 credits

ARTS 2252	Painting: Color Investigations	3
ARTS 3150	Drawing II - Figure	3
ARTS 4100	Watercolor	3
ARTS 4252	Experimental Painting	3
ARTS 4260	Advanced Painting	3

Prescribed Distributed Requirements for the Major in Painting - 9 credits

Select nine (9) credits form the following courses:

ARTS 1100	Color Theory	3
ARTS 3004	Arts of The Book	3
ARTS 3212	Figure Painting	3
ARTS 3351	Serigraphy I	3
ARTS 4150	Advanced Drawing	3
ARTS 4202	Airbrush	3
ARTS 4210	Mural Painting	3
ARTS 4360	Digital Art	3
ARTS 4365	Computerized Graphic Design	3

Printmaking (BFA)

Requirements for Printmaking

Major Courses - 15 credits

ARTS 3351	Serigraphy I	3
ARTS 4010	Engraving and The Image	3
ARTS 4350	Intaglio Techniques	3
ARTS 4353	Lithography	3
ARTS 4355	Photo Serigraphy	3

Prescribed Distributed Requirements for the Major in Printmaking- 9 credits

Select nine (9) credits form the following courses:

ARTS 1100	Color Theory	3
ARTS 3004	Arts of The Book	3
ARTS 3150	Drawing II - Figure	3
ARTS 3352	Serigraphy II	3
ARTS 3355	Linoleum and Wood Engraving Techniques	3
ARTS 4150	Advanced Drawing	3
ARTS 4202	Airbrush	3
ARTS 4360	Digital Art	3
ARTS 4365	Computerized Graphic Design	3

Teaching Art (BFA)

Requirements-for-Teaching-Art

Major Courses in Teaching Art - 46 credits

Foundation - 26 credits

ARED 3016	Assessment Strategies in the Teaching of Fine Arts	3
EDUC 2021	History and Philosophy of Education	3
EDUC 2022	Society and Education	3
EDUC 2031	Developmental Psychology	3
EDUC 2032	Learning Psychology	3
EDUC 2870	The Exceptional Student Population	4
EDUC 4050	Curriculum Design	2
EDUC 4551	Integration of Basic Knowledge and Communication Skills	1
EDUC 4552	Integration of Professional Skills	1
HIST 3010	Historical Process of the United States of America	3

Processes and Technology - 14 credits

ARED 1080	Field Experiences in the Teaching of Fine Arts I	1
ARED 2000	Theory and Fundamentals of the Teaching of the Fine Arts	3
ARED 2060	Integration of Technology in the Teaching of the Fine Arts	2
ARED 2080	Field Experiences in the Teaching of Fine Arts II	2
ARED 3860	Methods in the Teaching of Fine Arts in the Elementary and Secondary School	4
ARED 4902	Research in the Teaching of Fine Arts	2

Clinical Experience - 6 credits

ARED 3080	Clinical Experiences in the Teaching of Fine Arts I	2
ARED 4913	Clinical Experiences in the Teaching of Fine Arts II	4

Forensic Biology (BS)

Forensic Biology (BS)

The Bachelor of Science degree in Forensic Biology presents a curriculum of an interdisciplinary nature by applying natural and mathematical sciences to the comparative analysis of bacteriological material to

contribute to clarify the causes, method and circumstances of death and other crimes. The Program aspires to make the graduates one proficient in the collection and preservation of biological material and in the use of techniques of hematological, serologic and DNA analyses.

The Bayamón Campus is authorized to offer this Program.

Goals of the program

1. Develop professionals in the field of forensic biology who have mastery of the discipline through an interdisciplinary approach.

2. Promote the development of professionals with the expected competencies in the workplace at a national or international level.

Program objectives

1. Develop the forensic, chemical, biological, mathematical and physical knowledge necessary in the field of forensic biology.

2. Develop skills for the application of adequate techniques for hematological, serological and DNA analyzes that are used in the clarification of cases of death and other crimes.

3. Develop professionals who are willing to work as a team and comply with the ethical and legal standards of the profession.

Competencies Profile of Graduates

This Program is designed to develop the competencies that will enable students to:

Knowledge

1. Demonstrate general knowledge in forensic Biology.

2. Demonstrate general knowledge on analysis and identification of samples of biological origin.

Skills

1. Use the suitable modern technologies to carry out hematological, serologic and DNA analyses.

2. Apply general knowledge of Biology to specific analyses of DNA, blood and other corporal fluids.

Attitudes

1. Work in teams to carry out a criminal research within the legal, ethical and moral frame.

Academic Requirements for the Bachelor of Science Degree in Forensic Biology

General Education Requirements	45 credits
Major Requirements	26 credits
Related Requirements	54-55 credits
Elective Courses	3 credits
Total	128-129 credits

General Education Requirements - 45 credits

Forty-five (45) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees." Students will take the course GEMA 1200 in the Basic Skills in Mathematics category. Students are exempt from taking courses in the Scientific and Technological Context category.

Major Requirements - 26 credits

FORS 2000	Introduction to Forensic Science	3
FORS 3010	Forensic Biology Skills Lab	1
FORS 397_	Special Topics	3
FORS 4421	Forensic Investigation I	3
FORS 4511	Forensic Biological Analysis I	3
FORS 4512	Forensic Biological Analysis II	3
FORS 4910	Forensic Practice	3
FORS 4960	Integration Seminar	1
CJUS 1000	Introduction to Criminology	3
CJUS 3025	Criminal Law	3

Related Requirements - 54-55 credits

BIOL 1101	General Biology I	3
BIOL 1102	General Biology II	3
BIOL 1103	Biology Skills Laboratory I	1
BIOL 1104	Biology Skills Laboratory II	1
BIOL 1116	Fundamentals of Human Anatomy and Physiology	5
BIOL 2153	Biostatistics	3
BIOL 3010	Genetics	3
BIOL 3220	Biochemistry	3
BIOL 4604	Cellular and Molecular Biology	3
CHEM 1111	General Chemistry I	4
CHEM 2212	General Chemistry II	4
CHEM 2221	Organic Chemistry I	4
CHEM 2222	Organic Chemistry II	4
CJUS 1000	Introduction to Criminology	3
CJUS 3025	Criminal Law	3
PHYS 3001	General Physics I	4
PHYS 3002	General Physics II	4

MATH 1500	Precalculus	5
	Or	
MATH 1511	Precalculus I	3
MATH 1512	Precalculus II	3

Minor in Forensic Biology

This minor is for students that comply with the prerequisites of the courses.

The Bayamón Campus is authorized to offer this minor.

Requirements for the Minor in Forensic Biology - 22 credits

Courses for the Minor in Forensic Biology

BIOL 1102	General Biology II	3
BIOL 1104	Biology Skills Laboratory II	1
BIOL 2153	Biostatistics	3
BIOL 3010	Genetics	3
BIOL 3105	General Microbiology	4
BIOL 3405	Immunology	3
BIOL 4604	Cellular and Molecular Biology	3
BIOL 4605	Cellular and Molecular Biology Skills Laboratory	2

Computer Forensics (AAS)

The Associate Degree program in Applied Science in Computer Forensics is oriented to the training of professionals who possess the necessary skills to work in the field of forensic informatics. This Program is designed for students interested in the fields of forensic informatics systems related to digital forensic analysis and the application of systematic investigation techniques to reconstruct a sequence of events and conduct a forensic analysis in a criminal investigation. The curriculum covers software, hardware, intrusion network protection, security, hacking, cracking, information retrieval, and data decoding, among others. The program seeks to train graduates who may be eligible for work in digital consulting, cybersecurity, criminal investigation, fight against terrorism, and who can aspire to obtain certifications related to forensic informatics.

The student must pass the required courses in the major with the minimum grade of C.

The Guayama Campus is authorized to offer this Program through online education.

Competencies Profile of Graduates

The graduate of this associate degree will obtain a theoretical and practical education that will enable him to perform successfully both professionally and personally. This program, in addition to providing quality undergraduate education in science and practice in the field of forensic informatics, prepares students for employment in that field and a lifetime of learning. It also has as an educational goal to achieve a graduate with the knowledge, skills and attitudes that enable him to be employed, certified and at the same time offer a good service to the society to which he belongs. It is intended to train a well-educated and competent, responsible and respectful professional for himself, his profession and society. Once the student finishes his Associate Degree in Applied Science in Forensic Computing, he is expected to be able to exhibit competencies in the dimensions of knowledge, skills and attitudes.

Knowledge

Demonstrate knowledge and understanding of:

1. Forensic review and analysis procedures.

2. The ethics standards that govern forensic informatics science.

3. The legal and privacy aspects associated with the acquisition and review of magnetic media.

4. Maintenance of the chain of evidence custody when an investigation is conducted.

5. The different file systems associated with operating systems.

6. Aspects related to the operation of the Internet.

7. Password breaking techniques.

8. Topics related to investigations in forensic informatics.

Skills

1. Apply the laws and procedures associated with the identification, acquisition, examination, and presentation of digital evidence.

2. Employ theories related to computers in the context of forensic informatic practices.

3. Use the scientific process and apply the principles of forensic informatics research.

4. Evaluate the effectiveness of available forensic

informatic tools and use them in a way that optimizes the efficiency and quality of digital forensic investigation.

5. Identify and collect evidence in magnetic media.

6. Apply in detail the techniques for recovering data from various storage units.

7. Apply the appropriate techniques to preserve, analyze and report the results of the recovered data.

8. Correctly apply the main forensic analysis techniques.

Attitudes

1. Show commitment to ethical aspects and responsible for the problems of investigating cases related to forensic informatic.

2. Express appreciation for interdisciplinary teamwork as an effective means for solving problems in the field of forensic informatics.

3. Behave ethically in professional performance.

Requirements of the Associate Degree in Applied Sciences in Computer Forensics

General Education Requirements	24 credits
Major Requirements	21 credits
Prescribed Distributive Requirements	9 credits
Related Requirements	6 credits
Total	60 credits

General Education Requirements - 24 credits

Major Requirements - 21 credits

COMF 1110	Introduction to Computer Forensics	3
COMF 1220	Operating Systems Security	3
COMF 2110	Digital Data	3
COMF 2120	Cyber Crime and Tools for Computer Forensics	3
COMF 2220	Systems Design and Architecture	3
COMF 2230	Mobile Device Forensics	3
COMF 2231	Criminal Investigation	3

Prescribed Distributive Requirements - 9 credits

COTN 1120	Computer Program Design	3
COTN 1220	Data Communication	3
COTN 2121	Network Administration I	3

Related Requirements - 6 credits

CJUS 1000	Introduction to Criminology	3
CJUS 3025	Criminal Law	3

Forensic Science (BS)

Forensic Science (BS)

The Forensic Science Program presents an interdisciplinary program of studies that aims to develop in students the knowledge and fundamental skills necessary for the application of scientific methods used to contribute to the discovery of the causes, method and circumstances of violent deaths and other crimes. The Program emphasizes the treatment of evidence and is characterized by its combination of knowledge in the natural sciences, forensic sciences and in criminology.

The Aguadilla, Barranquitas, Bayamón and Ponce campuses are authorized to offer this Program.

Program Goals

1.

Develop professionals with the multidisciplinary knowledge and skills necessary to work with digital evidence, which includes the collection, management, analysis, conservation, and documentation.

2.

Train students in the techniques, strategies, and technologies of computer forensic science and computerized information systems.

3.

Promote ethical behavior based on knowledge of legal aspects and the codes that regulate the profession.

Program objectives

1.

Teach the forensic procedures used in the collection, handling, analysis, conservation and documentation of digital evidence.

2.

Present the forensic techniques to be used according to the medium or infrastructure in which the digital evidence is found.

3.

Apply the management and analysis of network infrastructures and computer architectures.

4.

Demonstrate the ethical and legal aspects applied to information systems and computer forensics.

Competencies Profile of Graduates

This Program is designed to develop the competencies that will enable students to:

Knowledge

1.

Know the general principles of computer forensic sciences, related to cybercrime investigations.

2.

Recognize patterns and procedures in the commission of cybercrimes.

3.

Know the impact of technology when designing investigative processes and the analysis of a computer system and the evidence contained in it.

Skills

1. Use the tools and skills in computer security to analyze, implement and evaluate an information system that meets the legal requirements.

2. Apply computer science in the course of a cybercrime investigation.

3. Apply forensic techniques and procedures to analyze digital evidence in accordance with standard protocols and appropriate tools.

4. Manage complex infrastructures of computer networks.

5. Analyze complex infrastructures of computer networks, computer architectures including "hardware" and "software".

Attitudes

1. Demonstrate an ethical and professional attitude in the scientific analysis of the evidence and in their role as investigator.

2. Recognize the importance of the legal frame of the criminal justice system.

Requirements for the Bachelor of Science Degree in Forensic Science

General Education Requirements	45 credits
Major Requirements	27 credits
Required Related Courses	46 credits
Elective Courses	3 credits
Total	121 credits

General Education Requirements - 45 credits

Forty-five (45) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees." Students are exempt from taking courses in the Scientific and Technological Context category. Students will take the course GEMA 1200 in the Basic Skills in Mathematics category.

Major Requirements - 27 credits

CJUS 1000	Introduction to Criminology	3
CJUS 3025	Criminal Law	3
FORS 2000	Introduction to Forensic Science	3
FORS 3970	Special Topics	3
FORS 4400	Forensic Toxicology	4
FORS 4421	Forensic Investigation I	3
FORS 4422	Forensic Investigation II	4
FORS 4910	Forensic Practice	3
FORS 4960	Integration Seminar	1

Required Related Courses - 46 credits

BIOL 1101	General Biology I	3
BIOL 1103	Biology Skills Laboratory I	1
BIOL 1116	Fundamentals of Human Anatomy and Physiology	5
CHEM 1111	General Chemistry I	4
CHEM 2212	General Chemistry II	4
CHEM 2221	Organic Chemistry I	4
CHEM 2222	Organic Chemistry II	4
CHEM 3320	Analytical Chemistry	4
CHEM 4220	Biochemistry	4
MATH 1500	Precalculus	5
PHYS 3001	General Physics I	4
PHYS 3002	General Physics II	4

Minor in Biology for Forensic Science

The Minor in Biology for Forensic Sciences presents a curriculum that aims to develop in the student the fundamental skills related to the application of the principles and theories of biology in research laboratories

and graduate schools.

The Ponce Campus is authorized to offer this minor.

Requirements for the Minor in Biology for Forensic Sciences - 22 credits

The Ponce and Bayamon Campuses are authorized to offer this minor.

Courses for the Minor in Biology for Forensic Sciences

BIOL 1102	General Biology II	3
BIOL 1104	Biology Skills Laboratory II	1
BIOL 2153	Biostatistics	3
BIOL 3010	Genetics	3
BIOL 3105	General Microbiology	4
BIOL 3405	Immunology	3
BIOL 4604	Cellular and Molecular Biology	3
BIOL 4605	Cellular and Molecular Biology Skills Laboratory	2

Minor in Forensic Science

The Aguadilla, Barranquitas, Bayamón and Ponce campuses are authorized to offer this Minor.

Requirements for the Minor in Forensic Science - 18 credits

Courses for the Minor in Forensic Science

CJUS 1000	Introduction to Criminology	3
CJUS 3025	Criminal Law	3
FORS 2000	Introduction to Forensic Science	3
FORS 3970	Special Topics	3
FORS 3970	Special Topics	3
FORS 4421	Forensic Investigation I	3

General Business Administration (BBA)

General Business Administration (BBA)

The Bachelor of Business Administration degree in General Business Administration aims to prepare professionals in Economic and Administrative Sciences with a multidisciplinary approach. The program focuses on the study of the foundations of business administration and is supplemented with the study of courses of specific areas to be determined by the student in agreement with his academic adviser and the approval of the department director. It provides a flexible and innovative programmatic vision, which promotes the integral development of students to expand their cognitive and creative capacities, as well as the critical judgment necessary to perform in the contemporary world.

This Program, in the Bayamón Campus, is accredited by the *Accreditation Council for Business Schools and Programs (ACBSP)* (https://www.acbsp.org/).

The Aguadilla, Bayamón and the Metropolitan campuses are authorized to offer this Program.

Competencies Profile of Graduates

This Program is designed to develop the competencies that will enable students to:

Knowledge

1. Know a variety of academic disciplines within business administration.

2. Show knowledge in the liberal arts and sciences applied to business administration.

3. Acquire knowledge of innovations and changes in the areas that make up business administration.

Skills

1. Communicate effectively in the oral as well in the written form.

2. Develop critical thinking from a multidisciplinary conceptual framework.

3. Use information technology for the analysis and solution of problem of business administration.

4. Develop the basic skills related to business administration.

Attitudes

1. Value the fundamental concepts of the different disciplines of economic and administrative sciences.

2. Show an ethical, legal and socially responsible attitude in the process of decision-making in business administration.

3. Foment a harmonious organizational climate.

Admission Requirements

In addition to the admission requirements established in this Catalog, students of this Program must be interviewed when this is necessary. If an interview is necessary for

online education students who will attend courses outside Puerto Rico, this may be conducted through the means available to students. The interview will be supervised by a proctor in the place where the student is located as determined by the University.

Requirements for the Bachelor of Business Administration Degree in General Business Administration

General Education Requirements	48 credits
Core Course Requirements	22 credits
Major Requirements	38 credits
Elective Courses	12 credits
Total	120 credits

General Education Requirements - 48 credits

Forty-eight (48) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees."

Core Course Requirements - 22 credits

ACCT 1161	Introduction to Financial Accounting	4
BADM 1900	Fundamentals of Business Management	3
MAEC 2140	Fundamentals of Quantitative Methods	3
MAEC 2211	Principles of Microeconomics	3
MAEC 2221	Basic Statistics	3
MKTG 1210	Introduction to Marketing	3
OMSY 3030	Business Communication in Spanish Or	3
OMSY 3040	Business Communication in English	3

Major Requirements - 38 credits

Students will take 38 major credits selected from the following disciplines: Marketing, Human Resources Management, Entrepreneurial and Managerial Development, Industrial Management, Office Systems Administration, Accounting, Finance, Computerized Information Systems, Managerial Economics or any area related to Business Administration. The major requirements will be established in agreement between the student and the academic adviser, with the approval of the department director.

General Studies (AA)

The Associate of Arts in General Studies is designed to develop a set of integrated educational experiences with the objective of qualifying professionals through an interdisciplinary approach. The curriculum will contribute to the integral development of students' personal and professional dimensions. The program will enable students to find solutions to social problems from a critical, ethical and entrepreneurial perspective by applying the knowledge, skills and attitudes promoted in the Program. In addition, the study plan is designed to enable students to pursue further studies leading to higher academic goals in areas of professional interest.

The Bayamón Campus is authorized to offer this Program.

Program Goals

In accordance with the description of the Associate Degree Program in General Studies, the following goals are established:

1. Develop individuals' mastery of knowledge in the context of General Studies.

2. Promote problem solving through scientific inquiry and the use of information and communication technologies within the framework of ethical responsibility.

3. Develop individuals who have ethical sensitivity and accept cultural diversity.

Program General Objectives

The program pursues the following general objectives:

1. Demonstrate general knowledge (theoretical and practical) in the areas of the humanities, natural sciences, technology, social sciences and administration.

2. Apply scientific knowledge and information and telecommunication technologies to authentic problem solving in a critical, creative, ethical and entrepreneurial manner.

3. Promote the development of an attitude of acceptance and sensitivity towards cultural diversity from a perspective of personal and social ethics.

Competencies Profile of Graduates

The Program is designed to develop the general competencies that will enable students to have:

Knowledge

Knowledge and comprehension of:

1. the historical emergence and development of art, from prehistoric times to the present;

2. general concepts related to the characteristics and organization of living things, as well as applying basic laboratory skills to the study of biomolecules and the cell;

3. theoretical and methodological foundations of environmental sciences and implications for social and economic aspects;

4. theoretical foundations, as well as organizational and managerial development and functioning within the context of business.

Skills

1. Analyze the development stages of the human life cycle from a biopsychosocial perspective, as well as the theoretical framework of the psychology of human behavior.

2. Demonstrate refinement of oral and written communicative competence through literature.

3. Apply basic concepts and fundamental aspects of the Internet and telecommunications, as well as simple electronic applications.

4. Apply basic concepts related to entrepreneurship for self-management in social organizations.

5. Apply theories and ethical principles to current problems that affect personal and social morality.

Attitudes

1. Demonstrate an attitude of personal and social ethics towards diversity in all its manifestations.

Graduation Requirements

1. Students must pass all major courses with a minimum C grade.

Requirements of the Associate of Arts in General Studies

General Education Requirements	24 credits
Major Requirements	31 credits
Elective Courses	6 credits
Total	61 credits

General Education Requirements - 24 credits

GESP	Spanish - Select 6 credits from the GESP category	6
GEEN	English - Select 6 credits from the GEEN category	6
GEP-GECF 1010	Introduction to the Christian Faith	3
GEP-GEIC 1010	Information and Computing Technologies	3
GEP-GEMA 1200	Fundamentals of Algebra	3
GEP-GEHS 2010	Historical Process of Contemporary Puerto Rico Or	3
GEP-GEEC 2000	Entrepreneurial Culture	3

Major Requirements - 31 credits

ARTS 2403	History of Art	3
BADM 1900	Fundamentals of Business Management	3
BIOL 1101	General Biology I	3
BIOL 1103	Biology Skills Laboratory I	1
COMP 2025	Development of Webpages	3
ENTR 2212	Social Entrepreneurism	3
EVSC 1110	Introduction to Environmental Sciences	3
GEP-GESP 2023	Advanced Spanish as a Foreign Language	3
HESC 3005	Human Development	3
GEP-GEPE 4040	Ethics and Social Responsibility	3
PSYC 1051	General Psychology I	3

Graphic Design (AVA)

The Program of the Associate of Visual Arts degree in Graphic Design aims to prepare the students to work in the communication of ideas and information industry, by means of the use of visual strategies, such as: the printed medium, images for commercial communication and digital presentations. It aspires to prepare graduates to work in the area of the graphic design, either in printing or

electronically, advertising design, digital art and design for electronic distribution or Internet.

The San Germán Campus is authorized to offer this Program.

Competencies Profile of Graduates

The Program is designed to develop the competencies that will enable students to:

Knowledge

Demonstrate knowledge and comprehension of:

1. the theory of design in the different conceptual expositions of graphic communication.

2. the tools of graphic works in different media related to the printing and publishing industry.

3. the graphical techniques to create and present works in printed or electronic media.

Skills

1. Apply the technology in doing work in graphic design.

2. Complete works of graphic design with technical abilities.

3. Select the techniques, images and tools that best solve graphic and conceptual problems.

Attitudes:

1. Appreciate the commitment with their professional role to create and to perform the graphical work in an ethical manner.

2. Develop graphic works by putting into practice a high degree of intellectual honesty.

Requirements for the Associate of Visual Arts Degree in Graphic Design

General Education Requirements	24 credits
Major Requirements	31 credits
Prescribed Distributive Requirements	6 credits
Total	61 credits

General Education Requirements - 24 credits

GESP	Spanish - Select 6 credits from the GESP category	6
GEEN	English - Select 6 credits from the GEEN category	6
GEP-GECF 1010	Introduction to the Christian Faith	3
GEP-GEIC 1010	Information and Computing Technologies	3
GEP-GEMA 1000	Quantitative Reasoning	3
GEP-GEHS 2010	Historical Process of Contemporary Puerto Rico Or	3
GEP-GEEC 2000	Entrepreneurial Culture	3

Major Requirements - 31 credits

ARTS 1100	Color Theory	3
ARTS 1102	Technical Foundations and Drawing Practice	4
ARTS 1200	Introduction to Graphic Design	3
ARTS 1220	Electronic Image	3
ARTS 1420	Typography Design	3
ARTS 1430	Design for Printed Publication And Electronic Distribution	3
ARTS 1541	Digital Photography	3
ARTS 1600	Evolution of The Graphic Design	3
ARTS 2111	Graphic Design Applied to Internet	3
ARTS 3000	Ethics in Graphic Design	3

Prescribed Distributive Requirements - 6 credits

Students will select six credits from the following courses:

ARTS 2331	Design of Interactive Projects, Multimedia and Mobile Apps	3
ARTS 2521	Three-Dimensional Design	3
ARTS 2540	Video and Digital Sound	3
ARTS 2541	Special Effects for Digital Video	3
ARTS 2911	Supervised Experience in Graphic Arts	3

Graphic Design (BVA)

The Visual Arts Program in Graphic Design offers the degrees of Associate of Arts and Bachelor of Arts.

The degrees in Visual Arts in Graphic Design prepare the students to work in the communication of ideas and information industry, by means of the use of visual strategies, such as: the printed medium, images for commercial communication and digital presentations. It aspires to prepare graduates to work in the area of the

graphic design, either in printing or electronically, advertising design, digital art and design for electronic distribution or Internet.

The student of the Associate Degree in Visual Arts in Graphic Design will have the option of continuing studies to complete their Bachelor.

The San Germán Campus is authorized to offer this Program.

Competencies Profile of Graduates

The Program is designed to develop the competencies that will allow students to:

Knowledge

Demonstrate knowledge and comprehension of:

1. the theory of design of different conceptual approaches in graphic communication.

2. the tools of graphic works in different media relevant to the printing and publishing industry.

3. the graphic techniques to create and present work in print or electronic media.

Skills

1. Apply the newest technology in the development of works in graphic design.

2. Perform graphic design work with technical maturity.

3. Select the techniques, images, and tools that best solve graphic and conceptual problems.

4. Develop works with awareness of the place, time and space where it is completed.

Attitudes

1. Appreciate the commitment to their role as professionals to create and execute graphic work ethically.

2. Develop graphic works with a high degree of intellectual honesty.

3. Recognize the value of honesty, avoiding the illegal appropriation of images.

Requirements for the Bachelor of Arts in Visual Arts in Graphic Design

General Education Program Requirements	48 credits
Major Requirements	49 credits
Prescribed Distributive Requirements	9 credits
Elective Courses in Fine Arts	9 credits
Elective Courses	6 credits
Total	121 credits

General Education Program Requirements - 48 credits

Forty-eight (48) credits are required as explained in the General Education Requirements for Bachelors section.

Major Requirements - 49 credits

ARTS 1100	Color Theory	3
ARTS 1102	Technical Foundations and Drawing Practice	4
ARTS 1200	Introduction to Graphic Design	3
ARTS 1220	Electronic Image	3
ARTS 1420	Typography Design	3
ARTS 1430	Design for Printed Publication And Electronic Distribution	3
ARTS 1541	Digital Photography	3
ARTS 1600	Evolution of The Graphic Design	3
ARTS 2111	Graphic Design Applied to Internet	3
ARTS 2331	Design of Interactive Projects, Multimedia and Mobile Apps	3
ARTS 2521	Three-Dimensional Design	3
ARTS 2540	Video and Digital Sound	3
ARTS 2541	Special Effects for Digital Video	3
ARTS 3000	Ethics in Graphic Design	3
ARTS 3420	Typography Design Ii	3
ARTS 4000	Corporate Identity Design	3

Prescribed Distributive Requirements - 9 credits

Select nine (9) credits from the following courses:

ARTS 3600	Poster Design	3
ARTS 4860	Packaging Design	3
ARTS 4911	Supervised Practice	3
ARTS 4920	Graphic Design for Display and Environmental Works	3

Elective Courses in Fine Arts - 9 credits

Select nice (9) credits in Fine Arts, within the following areas: Ceramics. Drawing, Sculpture, Painting,

Photography, and Printmaking.

Health Sciences (BS)

Health Sciences (BS)

The program of the Bachelor of Science Degree in Health Sciences is interdisciplinary and flexible. The Program is designed to promote the development of sensitive health professionals that possess the knowledge and skills to offer quality health services. This knowledge is based on concepts and principles of natural, social and health sciences.

Students may choose a major in administration or education, which will allow them to occupy positions of a higher hierarchy and of leadership in their work. Graduates from this program will work within their professional field, in areas such as: government agencies, insurance companies, pharmaceuticals, medical and diagnosis equipment companies, managerial positions such as department managers in hospitals or offices.

The Ponce Campus is authorized to offer this Program in distance education modality.

Program Goals

The Bachelor of Science in Health Sciences aims to:

1. Develop health professionals who possess leadership skills, knowledge and theoretical, practical, communicative, ethical, legal, administrative and psychological domain to effectively serve the health care environment.

2. Promote the implementation of practical measures in problem solving and integration of modern practices in the field of educational and administrative health-related services.

3. To value both the exercise of organizational and educational management as well as the skills that a server possesses in the area of health sciences, to be a professional who can participate with sensitivity in the programs that contribute to the improvement of the sanitary conditions of the community.

Program Objectives

The Bachelor of Science in Health Sciences aims that, at the end of the study program, the student:

1. Analyze the general theoretical and philosophical principles related to the latest trends in the guarantee and improvement of the quality of health services through administrative and educational management in these services.

2. Discern the variables for decision-making and bioethical considerations in regulatory agencies in areas related to applicability and compliance with laws during the provision of services related to community health.

3. Classify the existing diagnostic, therapeutic and technological means destined to the management of diseases throughout the life cycle, considering the economic impact on health services. It will effectively review strategies for the promotion of health in the community, the protection of environmental health, health services and resources.

4. Contrast the process of physical-biological, social, intellectual and psychological development in the different stages of the life cycle from conception to death.

5. Devise marketing programs for services, taking into consideration the social responsibility of the health agency and including the ethical principles that govern the marketing field.

6. Propose reforms for the management of conflicts or controversies in health care services through the effective use of the nomenclature and communication skills pertinent to the case.

7. Correctly apply the principles and concepts of the audit for the internal control of agencies applied to the public and private governmental health systems in Puerto Rico.

8. Thoroughly analyze the methodological foundations of scientific research in health services.

9. Safely project leadership skills in its execution when it is necessary to expose knowledge acquired in the field of health sciences.

10. Assess the professional skills of supervision and administration necessary to create strategies for promoting health in the community, protecting environmental health, improving the quality of services, and managing available health resources.

11. Forge positive attitudes towards the development and care of the healthy human body to improve the

quality of life in the social group to which we belong from the administrative and educational management.

Competencies Profile of Graduate

The program is designed to develop competencies, where the student:

Knowledge

1. Understand the general theoretical concepts related to administration, supervision, management and leadership to guarantee the quality of services in the health field through management in areas of potential risk assessment, physical plant review, safety in the work area, infection control, human resource management, service quality verification and billing.

2. Analyze the bioethical, ethical and legal principles as a consequence of the constitutional mandates that regulate the practices related to the health services provided, considering the provider as the patient and following the laws of Puerto Rico.

3. Identify the factors that intervene in health and disease throughout the life cycle to establish the steps related to its prevention and its promotion in the community.

4. Know fundamental principles of the physical, biological and psychological sciences for the understanding of the development of the human body in sanitary practices.

Skills

1. Organize the strategies leading to the analysis of the economic systems that are related to promotion, auditing and marketing to create and apply management activities towards the respective populations involved from planning to the provision of health services.

2. Communicate orally and in writing the relevant terminology to effectively address controversial situations related to the professional field, considering the social, economic and political impact caused by them.

3. Facilitate the internal and external audit process in the provision of health services considering legal and ethical principles, new service trends and controversies arising in the health environment.

4. Apply quality administrative knowledge to solve problems using the contrast of different scientific investigations in the field of health.

Attitudes

1. Assume the commitment of leadership and social responsibility by perceiving themselves as a pillar professional in charge of directing health services.

2. Self-esteem one's own skills as a management leader in the design of the processes required by community health services, such as the diagnosis of needs, formulation of objectives, selection of content, planning and evaluation of science-related services of the health.

3. To assume an authentic position towards the importance of the components of the development and evolution of the human being associated with biological, emotional and psychosocial factors in the achievement of a full and productive life within the community.

Admission Requirements

Candidates desiring to enter this Program must comply with the following requirements:

1. Have a minimum grade point average of 2.50.

2. Comply with all the admission requirements at the undergraduate level established in this Catalog and by the Campus.

3. Comply with the requirements established by the Department of Health Sciences:

   a. Health Certificate.

   b. Hepatitis B Vaccination Certificate.

   c. No Criminal Record Certificate.

4. Pass an interview with the Admissions Committee.

Graduation requirements

Candidates who aspire to graduate from this program must meet the following requirements:

1. Have a minimum GPA of 2.00

2. Pass with a minimum grade of C all the courses that are part of the major and core requirements.

Requirements for the Bachelor of Science Degree in Health Sciences

General Education Requirements	45 credits
Core Requirements	30 credits
Major Requirements	15 credits
Related Requirements	27 credits
Electives	3 credits
Total	120 credits

General Education Requirements at the Bachelor's Level - 45 credits

Forty-five (45) credits as explained in the General Education program for Bachelor Degrees section from the General Catalog.

Students of this Program are exempt from taking the course GEHP 3000 – Well-Being and Quality of Life.

Core Requirements - 30 credits

HESC 3005	Human Development	3
HESC 3010	Essential Concepts in Health Sciences	3
HESC 3020	Health and Illness Throughout the Life Cycle	3
HESC 4010	Research Methods in Health Sciences	3
HESC 4015	Quality Guarantee and Improvement	3
HESC 4030	Collective Health Promotion	3
PSYC 1051	General Psychology I	3
PSYC 3001	Statistical Methods I	3
BADM 1900	Fundamentals of Business Management	3
HESC 4917	Professional Seminar	3

Major-Requirements - 15 credits

Major-in-Administration-Health-Sciences

HESC 4050	Planning and Marketing Health Services	3
HESC 4065	Auditing Principles Applied to Health Services	3
HRMA 2100	Human Resource Administration	3
HRMA 3000	Organization Behavior	3
HRMA 3100	Leadership and Supervision	3

Major in Education - Health Sciences

HESC 4055	Methods and Techniques in Teaching Health Science	3
HESC 4060	Design and Development of an Educational Health Plan	3
HESC 4913	Internship	4
EDUC 2021	History and Philosophy of Education	3
EDUC 2022	Society and Education	3
EDUC 2031	Developmental Psychology	3
EDUC 2032	Learning Psychology	3

Related Requirements - 27 credits

Select twenty-seven (27) credits from Natural Sciences or Health Sciences courses

Health Services Administration (BBA)

The Bachelor of Business Administration with a major in Health Services Administration intends to prepare graduates to work in administrative positions at the frontline or intermediate management level that do not require a professional license. The competencies, skills and knowledge necessary to work in organizations with or for nonprofits in various health care settings will be developed.

The student must pass with the minimum grade of C all core and major courses required.

The Arecibo Campus is authorized to offer this program.

Program Goals

1. Offer a curriculum that enables graduates to work as administrators in health or health-related organizations at the frontline or intermediate management level that do not require a professional license.

2. Provide educational experiences that allow graduates to be able to assess the service needs of the various populations, risk management and health care behavior by integrating the knowledge, skills and attitudes acquired.

Competencies Profile of Graduates

The Program is designed to develop skills that allow the student to demonstrate:

Knowledge

Demonstrate knowledge and understanding of:

1. administrative and managerial principles related to strategic planning, human resources administration

and distribution of resources in the health industry.

2. the principles and practices of economics and accounting and the analysis and information of the financial data of the organization and the health industry.

3. public (governmental) and organizational health policies.

4. the norms and laws in force in the different areas of health.

5. the principles and processes necessary to provide services to clients in the area of health.

6. Information systems in the area of health.

Skills

1. Integrate technology as a tool in information management, problem solving and decision making.

2. Communicate financial information orally and in writing.

3. Assess the needs of populations, risk management and behaviors in health services.

4. Use logic and critical reasoning to identify strengths and weaknesses of alternative solutions, conclusions or approaches to problems.

5. Consider the relative costs and benefits of potential actions to select the most viable.

6. Work with multidisciplinary teams.

Attitudes

1. Consciously exercise your social, ethical and legal responsibility in the performance of the profession.

2. Value the importance of continuous professional development and training.

Requirements of the Bachelor in Business Administration in Health Care Services

General Education Requirements	48 credits
Core Requirements	41 credits
Major Requirements	27 credits
Prescribed Distributive Courses	3 credits
Elective Courses	3 credits
Total	122 credits

General Education Requirements - 48 credits

Forty-eight (48) credits are required as explained in the General Education Requirements for Bachelor section. Students in this program will take GEMA 1200 in the Basic Math Skills category.

Core Requirements - 41 credits

ACCT 1161	Introduction to Financial Accounting	4
ACCT 1162	Introduction to Managerial Accounting	4
BADM 1900	Fundamentals of Business Management	3
BADM 3900	Information Systems in Organizations	3
BADM 4300	Managerial Economics	3
FINA 2101	Corporate Finance I	3
MAEC 2140	Fundamentals of Quantitative Methods	3
MAEC 2211	Principles of Microeconomics	3
MAEC 2212	Principles of Macroeconomics	3
MAEC 2221	Basic Statistics	3
MAEC 2222	Managerial Statistics	3
MKTG 1210	Introduction to Marketing	3
OMSY 3030	Business Communication in Spanish Or	3
OMSY 3040	Business Communication in English	3

Major Requirements - 27 credits

HRMA 2100	Human Resource Administration	3
OPMS 3340	Management Policies and Strategies	3
HRMA 3100	Leadership and Supervision	3
HCAD 1100	Fundamentals in Health Care Service	3
HCAD 2100	Introduction to Public Health Policy	3

HCAD 2200	Ethical and Legal Aspects in the Health Care Service	3
HCAD 3000	Information Technology and Communication in Administration of Healthcare	3
HCAD 4000	Financial Aspects in the Healthcare Service	3
HCAD 4200	Integrated Seminar	3

Prescribed Distributive Courses Requirements - 3 credits

HRMA 3000	Organization Behavior	3
BADM 3313	The Law and The Businesses	3
HRMA 3200	Labor Security and Hygiene	3
HRMA 3500	Labor Legislation	3
HRMA 3600	Wage and Salary Management	3
OPMS 3000	Operations Management of Manufacturing and Service	3
ENTR 2200	Foundations of Entrepreneurship	3

History (BA)

History (BA)

The major in history offers a program of study leading to the Bachelor of Arts Degree in History. The Program provides students with an appreciation of the development of mankind in addition to providing essential training for careers in education, law, literature, communication, journalism, art, library science, curatorship, religion, private enterprise and public service.

The Metropolitan Campuses is authorized to offer this Program.

Competencies Profile of Graduates

The program is designed to permit the development of the following competencies:

Knowledge

1. To know the theoretical principles of historical research and their application.

Skills

1. To apply knowledge in the different professional areas, such as education, law, literature, the communications, journalism, art, library science, archiving, museography, religion, private enterprise and public service.

2. To use interdisciplinary knowledge in the

construction of a world view of reality.

3. To explain the historical and cultural development of Puerto Rico in the context of universal history.

4. To apply the knowledge of history to the analysis of different kinds of human problems.

Attitudes

1. To appreciate the historical development of human beings and their society through centuries.

2. To value the role of the historian in modern society.

Requirements for the Bachelor of Arts Degree in History

General Education Requirements	45 credits
Major Requirements	33 credits
Prescribed Distributive Requirements	21 credits
Required Related Courses	14 credits
Elective Courses	9 credits
Total	122 credits

General Education Requirements - 45 credits

Forty-five (45) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees." Students of this Program are exempt from taking the course GEHS 2010 - Historical Process of Contemporary Puerto Rico.

Major Requirements - 33 credits

HIST 1020	The AncientWorld	3
HIST 1030	The Medieval World	3
HIST 1040	The Modern World	3
HIST 1050	The Contemporary World	3
HIST 2030	Colonial Latin America	3
HIST 2050	Puerto Rico I	3
HIST 2055	Puerto Rico II	3
HIST 3050	United States I	3
HIST 3055	United States II	3
HIST 4020	Historiography	3
HIST 4210	Historical Research	3

Prescribed Distributive Requirements - 21 credits

Twenty-one (21) credits from the following courses:

HIST 2010	Latin American Indigenous Cultures	3
HIST 2020	Spain and Portugal I	3
HIST 2025	Spain and Portugal II	3
HIST 2035	Latin America Since its	3

	Independence	
HIST 2040	The Caribbean Since the 17th Century	3
HIST 2060	Introduction to Oral History	3
HIST 2210	The Computer in Historical Research	3
HIST 2220	Puerto Rico and the Insular Caribbean in the 20th Century	3
HIST 3010	Historical Process of the United States of America	3
HIST 3020	Europe I	3
HIST 3025	Europe Ii	3
HIST 3030	The Muslim World	3
HIST 3040	Africa	3
HIST 3060	Asia	3
HIST 3075	Russia During the 19th and 20th Centuries	3
HIST 3210	The Second British Empire	3
HIST 3220	Mexico Since its Independence	3
HIST 3225	The Viceroyalty of the New Spain	3
HIST 3230	The Era of Revolutions 1774 - 1824	3
HIST 397_	Special Topics	3
HIST 4110	Historical Problems	3
HIST 4220	Brazil	3
HIST 4230	Spanish American Institutions Before Independence	3
HIST 4240	Countries of the Southern Cone	3
HIST 4250	Canada	3
HIST 4260	Relations of Church and State in Colonial America	3
HIST 4300	Study-Travel	3

Required Related Courses - 14 credits

Choose eight (8) credits in language courses from the following:

ITAL 1001	Elementary Italian	4
ITAL 1002	Elementary Italian	4
FREN 1001	Elementary French	4
FREN 1002	Elementary French	4
PORT 1001	Elementary Portuguese	4
PORT 1002	Elementary Portuguese	4

Note: It is recommended that students, who wish to continue graduate studies in history, take the credits in the same language.

Choose six (6) credits from the following courses:

ANTH 3010	Ethnography and Ethnology	3
ANTH 3500	Archeology	3
ANTH 4700	Cultures of The Caribbean	3
SOCI 3900	History of Social Thought	3
POLS 2040	Government of the United States	3
POLS 2088	Government of the Commonwealth of Puerto Rico	3
POLS 3501	Political Systems of Latin America	3
GEOG 3434	Geography of Middle America And the Caribbean	3
GEOG 4494	Geography of Puerto Rico	3

Minor in History

The Metropolitan Campus is authorized to offer this minor.

Requirements for the Minor in History - 18 credits

Courses in Universal Historical Heritage - 6 credits

Two (2) courses from the following:

HIST 1020	The AncientWorld	3
HIST 1030	The Medieval World	3
HIST 1040	The Modern World	3
HIST 1050	The Contemporary World	3

Courses in Regional Historical Heritage - 9 credits

Three (3) courses from the following:

HIST 2050	Puerto Rico I	3
HIST 2055	Puerto Rico II	3
HIST 2010	Latin American Indigenous Cultures	3
HIST 2030	Colonial Latin America	3
HIST 2035	Latin America Since its Independence	3
HIST 2040	The Caribbean Since the 17th Century	3
HIST 3050	United States I	3
HIST 3055	United States II	3
HIST 2020	Spain and Portugal I	3
HIST 2025	Spain and Portugal II	3

Elective Course in History - 3 credits

Select another history course.

Minor in History and Puerto Rican Literature

The minor in History and Puerto Rican Literature is a complementary academic offering to the Bachelor of Arts in History. This minor studies history from the point of view of literary activity. It develops research skills and the

interpretation of human literary facts from a historical perspective. It applies the knowledge of searching, administration and the basic organization of documents, and historiographic and literary material.

The Metropolitan Campus is authorized to offer this minor.

Requirements for the Minor in History and Puerto Rican Literature - 21 credits

Courses for the Minor in History and Puerto Rican Literature

SPAN 3211	Puerto Rican Literature I	3
SPAN 3212	Puerto Rican Literature II	3
SPAN 4196	The Language of Puerto Rico	3
HIST 2050	Puerto Rico I	3
HIST 2055	Puerto Rico II	3
HIST 2220	Puerto Rico and the Insular Caribbean in the 20th Century	3
HIST 3110	Research in History and Puerto Rican Literature	3

Hotel and Restaurant Management (BBA)

Hotel and Restaurant Management (BBA)

The fundamental purpose of the Bachelor's Degree in Business Administration with a major in Hotel and Restaurant Management is to prepare students in disciplines that will allow them to perform in managerial positions in companies in the hospitality industry.

The Program aspires to develop in students the competencies in the administration of hotel and foodservice organizations that promote an efficient, productive and ethical operation in the following areas: human resource management, service to clients, prices, publicity, foods and drink services, budget management, and maintenance of physical facilities.

Due to the nature of the hotel industry, graduates need to communicate effectively in English as well as in Spanish. In order to develop the communication skills in English, students are required to reach linguistic proficiency of at least the intermediate level (GEEN 1201, 1202 and 1203) and to pass a course of professional communication skills in English related to the industry (HRMT 2100). Some of the courses of this major are offered in English, to foment competence in this language.

Students must pass the required core and major courses with a minimum grade of C.

The Aguadilla and Ponce campuses are authorized to offer this Program. The Aguadilla campus are also authorized to offer this Program through online education.

Competencies Profile of Graduates

This Program is designed to develop the competencies that will enable students to:

Knowledge

1. Know the characteristic elements and the historical bases of the hospitality and gastronomy industry, framed in the development of tourism.

2. Understand the impact of this industry in the social, cultural, economic and environmental areas of the country, and the processes and procedures to reach organizational efficiency.

3. Identify the organizational tools that will permit the effective administration of the organizational elements in a hotel or gastronomical business.

4. Know the laws that apply to the operations of hotels and restaurants as part of the tourist industry of the country.

5. Know the role that human resources play in the success of a hotel or gastronomical organization.

6. Know the specific language of the industry and use it adequately to have an effective performance of their functions.

7. Know the ethical rules applied to decision making in the business and their benefits related to the social responsibility of the companies in this industry and of identifying the areas that have been identified for behaviors devoid of ethics.

Skills

1. Demonstrate their capacity to make decisions in diverse areas considering the consequences of these in the company for which they work, in their own company or in the hotel and gastronomical industry of the country, in general.

2. Evaluate organizational elements and their effectiveness.

3. Be able to make changes in the structures of hotels and restaurants that will permit greater effectiveness.

4. Be able to create standardized procedures that will

allow efficiency in the operation of companies in the hospitality industry.

5. Apply the managerial functions in the search for the appropriate use of resources and their greater productivity.

6. Use computerized programs, information systems and appropriate technology to hotel and gastronomical operations.

7. Make business decisions in controversial situations using the ethical rules as a guide.

Attitudes

1. Demonstrate a positive attitude towards responsible decision making and social commitment.

2. Value the importance that the organizational elements have in the successful performance of Hotels and Restaurants.

3. Value keeping up-to-date with the technologies pertinent to hotel and gastronomical operations.

4. Recognize the ability to communicate in English and Spanish as a crucial and enriching element of their personal experience to achieve professional success.

5. Respect ethics for obtaining business success, showing preference for those behaviors that result in the benefit of others and not exclusively for their own personal benefit.

Retention Requirements

The Bachelor's Program in Business Administration in Hotel and Restaurant Management requires that all students show satisfactory academic progress upon completing each academic year, as established in the institutional regulations found in the General Catalog. Furthermore, the student must maintain a minimum grade point average of 2.50 in the major.

In addition to the normal requirements established in the General Catalog, to receive the Bachelor's Degree in Business Administration in Hotel and Restaurant Management, the student must:

1. Obtain a minimum grade point average of 2.50 in major courses at the university level.

2. Have passed the following courses with a minimum grade of C: GEEN 1201, 1202, 1203 or 2311, 2312, 2313.

3. Have passed with a minimum grade of B the major courses: HRMT 1200 and HMGT 2100.

4. Have passed with a minimum grade of C the other courses of the major and their respective prerequisites (core and major courses).

Requirements for a Bachelor of Business Administration Degree in Hotel and Restaurant Management

General Education Requirements	48 credits
Core Course Requirements	26 credits
Major Requirements	51 credits
Elective Courses	3 credits
Total	128 credits

General Education Program Requirements - 48 credits

Forty-eight (48) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees." Students in this Program will take GEMA 1200 in the Basic Mathematical Skills category.

Core Course Requirements - 26 credits

ACCT 1161	Introduction to Financial Accounting	4
ACCT 1162	Introduction to Managerial Accounting	4
BADM 1900	Fundamentals of Business Management	3
MAEC 2140	Fundamentals of Quantitative Methods	3
MAEC 2211	Principles of Microeconomics	3
MAEC 2212	Principles of Macroeconomics	3
MAEC 2221	Basic Statistics	3
MAEC 2222	Managerial Statistics	3

Major Requirements - 51 credits

TURI 2000	Tourism Legislation	3
HRMT 1200	Introduction to the Tourism and Hospitality Industry	3
HRMT 1300	Introduction to Food and Beverages Management	3
HRMT 1301	Production Lab and Basic Food Services	2
HRMT 2100	Professional Communication Skills in English for the Hospitality and Tourism Industry	3
HRMT 2200	Introduction to Marketing in The Hospitality Industry	3
HRMT 2302	Production Lab and Advanced	2

	Food Services	
HRMT 2500	Human Resources Management in the Hospitality Industry	3
HRMT 2600	Drinks Management and Service	3
HRMT 2800	Restaurant Development and Management	3
HRMT 3010	Reception Department	3
HRMT 3300	Physical Facilities Management	3
HRMT 3330	Financial Management for Hospitality Organizations	3
HRMT 3400	Management of Casinos	3
HRMT 3500	Technology and Information Systems in the Hospitality Industry	3
HRMT 4400	Meetings and Convention Management	3
HRMT 4915	Internship in Hotel Management	5

Credit may be granted for the internship (HRMT 4915) to students who have had a satisfactory work experience and who apply for it in writing to the director of the academic department. This credit will be subject to the following:

1. Students have been working full-time in a company for a minimum of two consecutive years within the three-year period immediately prior to the date of their request.

2. Students submit a certification and letter from their employer or the Human Resources Department of their place of employment which specifies:

   a. Years of experience

   b. Period of the time employed

   c. Position or positions held

   d. Job description

   e. Copies of evaluations received

   f. Any other evidence of their professional performance during their employment.

3. Students pay 50% of the tuition costs of the internship course for which they are requesting credit.

4. The experience recognized by the University corresponds to the requirement for the degree that the student hopes to obtain from the Institution.

Minor in Hotel and Restaurant Management

The Minor in Hotel and Restaurant Management is for students of Business Administration and other majors. Its purpose is to offer students an alternative for personal and professional development within the hospitality industry.

The Aguadilla and Ponce campuses are authorized to offer this minor.

Requirements for the Minor in Hotel and Restaurant Management - 18 credits

Courses for the Minor in Hotel and Restaurant Management

HRMT 1200	Introduction to the Tourism and Hospitality Industry	3
HRMT 1300	Introduction to Food and Beverages Management	3
HRMT 2200	Introduction to Marketing in The Hospitality Industry	3
HRMT 3010	Reception Department	3
HRMT 3300	Physical Facilities Management	3
HRMT 4400	Meetings and Convention Management	3

Human Resources Management (BBA)

Human Resources Management (BBA)

Human Resources Management is a discipline of great importance in the strategic planning of organizations. The fundamental purpose of the Bachelor of Business Administration program in Human Resources Management is to provide students the knowledge, skills and abilities on the principles, practices and the processes of the strategic management of human resources. The Program emphasizes the importance of the integration of the objectives of human resources management with the organization's objectives and foments the attitudes that professionals in this field must possess.

Students must approve the required core and major courses with a minimum grade of C.

This Program, in the San Germán Campus, is accredited by the *International Assembly for Collegiate Business Education (IACBE),* located on 11374 Strang Line Road, Lenexa, Kansas, USA.

This Program, in the Bayamón Campus, is accredited by the *Accreditation Council for Business Schools and Programs (ACBSP)* (https://www.acbsp.org/).

All campuses are authorized to offer this Program. The Aguadilla, Barranquitas and Ponce campuses are also authorized to offer this Program through online education.

Program Goals:

The Bachelor of Business Administration program in Human Resource Management is designed to develop professionals who can:

1. Play a strategic role in the management of human resources in the workplace in a global environment.

2. Recognize the diversity of the workforce as active human capital in organizations.

3. Exercise leadership and be agents of change with social responsibility and ethical behavior.

Program Objectives:

1. Recognize the role of strategic administration of human resources management in organizations in the global environment.

2. Learn how the practices and policies of human resources management are articulated with the strategic administration of organizations.

3. Identify the characteristics of the workforce based on the practices of human resources management.

4. Learn to manage job diversity.

5. Develop the ethical-legal framework in the profession of human resources management.

6. Recognize the importance of continuous improvement in their profession and related areas to foster leaders as agents of change with social responsibility.

Competencies Profile of Graduates

This Program is designed to develop the competencies that will enable students to:

Knowledge

1. Recognize the contribution of human resources administration to managerial functions and its impact on the organization's strategic decision-making.

2. Identify the areas of the human resources related to recruitment, selection, training and development of the human resource; to compensations, labor legislation, syndication and collective bargaining; and to security and hygiene in the organizational work environment.

3. Compare the federal and state legal framework applicable to human resources management.

4. Explain the competitive advantage that the organizations must develop through their human resources to obtain a positioning in the local and international markets.

Skills

1. Apply the practices and the policies of the of human resources management that support the strategic administration of organizations using the information systems in human resources.

2. Communicate with property and correction, in oral as well as in written form, with the professional language of their field.

Attitudes

1. Show an ethical conduct in harmony with the standards of the profession in their performance and commitment to their professional improvement..

2. Appreciate the importance of diversity and inclusion, as well as the sensitivity considering the needs of the workforce.

Requirements for the Bachelor of Business Administration Degree in Human Resources Management

General Education Requirements	48 credits
Core Course Requirements	47 credits
Major Requirements	21 credits
Prescribed Distributive Requirements	3 credits
Elective Courses	3 credits
Total	122 credits

General Education Requirements - 48 credits

Forty-eight (48) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees." Students in this Program will take GEMA 1200

in the Basic Mathematical Skills category.

Core Course Requirements - 47 credits

ACCT 1161	Introduction to Financial Accounting	4
ACCT 1162	Introduction to Managerial Accounting	4
BADM 1900	Fundamentals of Business Management	3
BADM 3313	The Law and The Businesses	3
BADM 3900	Information Systems in Organizations	3
FINA 2101	Corporate Finance I	3
INTB 2100	Introduction to International Business	3
MAEC 2140	Fundamentals of Quantitative Methods	3
MAEC 2211	Principles of Microeconomics	3
MAEC 2212	Principles of Macroeconomics	3
MAEC 2221	Basic Statistics	3
MAEC 2222	Managerial Statistics	3
MKTG 1210	Introduction to Marketing	3
OPMS 3000	Operations Management of Manufacturing and Service	3
OMSY 3030	Business Communication in Spanish Or	3
OMSY 3040	Business Communication in English	3

Major Requirements - 21 credits

HRMA 2100	Human Resource Administration	3
HRMA 3000	Organization Behavior	3
HRMA 3100	Leadership and Supervision	3
HRMA 3400	Training and Development	3
HRMA 3500	Labor Legislation	3
HRMA 3600	Wage and Salary Management	3
HRMA 4970	Integration Seminar	3

Prescribed Distributive Requirements - 3 credits

Students will choose three (3) credits from the following:

HRMA 3200	Labor Security and Hygiene	3
HRMA 4100	Syndication and Collective Bargaining	3
HRMA 4915	Supervised Practice	3

Minor in Human Resources Management

The Aguadilla, Arecibo, Barranquitas, Bayamón, Fajardo, Guayama, Ponce and San Germán campuses are authorized to offer this minor. The Aguadilla and Ponce campuses area authorized to offer this minor through online education.

Requirements for the Minor in Human Resources Management - 18 credits

Courses for the Minor in Human Resources Management

BADM 1900	Fundamentals of Business Management	3
HRMA 2100	Human Resource Administration	3
HRMA 3100	Leadership and Supervision	3
HRMA 3400	Training and Development	3
HRMA 3500	Labor Legislation	3
HRMA 3600	Wage and Salary Management	3

Humanistic Studies (BA)

The Bachelor of Arts degree in Humanistic Studies aims to prepare professionals in the humanities with a multidisciplinary approach. The program focuses on the study of the foundations of Humanistic Studies, which are complemented and combined with the study of courses of specific areas to be determined by the student in agreement with his academic adviser and the approval of the department director. It provides a flexible and innovative programmatic vision, which promotes the integral development of students to expand their cognitive and creative capacities, as well as the critical judgment necessary to perform in the contemporary world.

The Metropolitan Campus is authorized to offer this Program.

Competencies Profile of Graduates

This Program is designed to develop the competencies that will enable students to:

Knowledge

1. Demonstrate how philosophy, literature, art, and music contribute to the appreciation of culture and other cultural expressions.

2. Recognize the importance of interdisciplinarity in understanding the problems that are debated in today's society.

Skills

1. Critically reflect on the existential problems of human beings in their social and historical development.

2. To develop the basic skills of oral and written communication in a third language.

3. Demonstrate both oral and written communication skills in the Spanish language.

Attitudes

1. Demonstrate commitment to promote peace, solidarity with other human beings and with the affirmation of the defense of Human Rights within the context of democratic societies.

2. Appreciate Puerto Rican history and culture in the broad context of intercultural dialogue.

Requirements for the Bachelor of Arts Degree in Humanistic Studies

General Education Requirements	48 credits
Core Course Requirements	27 credits
Major Requirements	33 credits
Related Requirements	3 credits
Elective Courses	9 credits
Total	120 credits

General Education Requirements - 48 credits

Forty eight (48) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees."

Core Course Requirements - 27 credits

ARTS 2403	History of Art	3
HIST 4110	Historical Problems	3
MUSI 3320	History of Puerto Rican And Latin American Music	2
PHIL 2013	Types and Problems in Philosophy	3
PHIL 2020	Introduction to Humanistic Studies	3
PHIL 3040	Philosophical Studies of Culture	3
RELI 4353	Philosophy of Religion	3
SPAN 3015	Oral Communication	3
SPAN 3020	Writing Workshop	3

Major Requirements - 39 credits

The student will be able to select the 33 credits among the disciplines that comprise Humanistic Studies, namely: popular music, social sciences, languages, literature, design, studies in religion, philosophy and history. The concentration requirements will be established in agreement between the student and the academic advisor with the approval of the department director.

Related Requirements - 3 credits

Basic Course in Languages:

GERM 1001	Elementary German	4
FREN 1001	Elementary French	4
ITAL 1001	Elementary Italian	4
PORT 1001	Elementary Portuguese	4

Industrial Chemistry (BS)

Industrial Chemistry (BS)

The Bachelor of Science Program in Industrial Chemistry presents a curriculum of an interdisciplinary nature that trains the student with knowledge, skills and attitudes to perform chemical analysis. The Program aims to develop competencies for the use of instrumental methods for chemical analysis, data analysis, and process optimization and validation.

Students interested in take the professional examination for chemists must approve the courses of Physical Chemistry (CHEM 3910 and 3920).

The Bayamón Campus is authorized to offer this Program.

Program Goals

The Bachelor of Science in Industrial Chemistry has the following goals:

1. Develop professionals in the field of industrial chemistry who possess the knowledge and skills in the different types of chemical analysis, through an interdisciplinary approach.

2. Promote the development of professionals with the necessary competencies and attitudes to be able to perform successfully in the workplace at the national or international level.

Program Objectives

1. Acquire general knowledge of mathematics and natural sciences relevant to industrial chemistry.

2. To develop the skills for the application of chemical analysis, the use of instrumental methods, data analysis, and the optimization and validation of necessary processes.

3. Develop future professionals with the appropriate attitudes to work in a team and comply with the ethical standards of the profession.

Competencies Profile of Graduates

The Program is designed to develop the competencies that will enable students to:

Knowledge

Demonstrate knowledge and understanding of:

1. general concepts and theories of chemistry.

2. qualitative and quantitative chemical analyzes.

3. the theoretical bases in the area of validations.

Skills

1. Operate chemical analysis instruments.

2. Apply the validation processes.

3. Produce written and oral technical reports.

Attitudes

1. Demonstrate a positive attitude towards teamwork.

2. Recognize the importance of compliance with the ethical standards of the profession.

Requirements for the Bachelor of Science Degree in Industrial Chemistry

General Education Requirements	45 credits
Major Requirements	70 credits
Prescribe Distributives Requirements	6-8 credits
Electives	3 credits
Total	124-126 credits

General Education Requirements - 45 credits

Forty-five (45) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees." Students will take the course GEMA 1200 in the Basic Skills in Mathematics category. Students of this program are exempt from taking the course from the Scientific and Technological Context category GEST 2020 or 3030.

Major Requirements - 70 credits

BIOL 1101	General Biology I	3
BIOL 1102	General Biology II	3
BIOL 1103	Biology Skills Laboratory I	1
BIOL 2153	Biostatistics	3
CHEM 1111	General Chemistry I	4
CHEM 2212	General Chemistry II	4
CHEM 2221	Organic Chemistry I	4
CHEM 2222	Organic Chemistry II	4
CHEM 3320	Analytical Chemistry	4
CHEM 3420	Environmental Analytical Chemistry	4
CHEM 4170	Separation Methods	3
CHEM 4220	Biochemistry	4
CHEM 4320	Industrial Chemical Analysis	4
CHEM 4870	Process Validation	3
CHEM 4970	Industrial Chemistry Seminar	1
MATH 1500	Precalculus	5
MATH 2251	Calculus I	5
MATH 2252	Calculus II	4
PHYS 3311	Physics for Engineers I	4
PHYS 3312	Physics for Engineers II	4

Prescribed Descriptive Requirements - 6-8 credits

The student will select from six (6) to eight (8) credits among the following courses. Other courses, three (3) or four (4) credits, may be considered with the approval of the academic advisor or department chair.

CHEM 2250	Chemistry and Soil Structure	3
CHEM 3350	Pharmaceutical Chemistry	3
CHEM 3360	Food Chemistry	3
CHEM 3370	Green Chemistry	3
CHEM 3380	Introduction to Nanotechnology	3
CHEM 397_	Special Topics	3
CHEM 4003	Industrial Chemistry	3
CHEM 4230	Forensic Chemistry	3
CHEM 4350	Chemistry of Materials	3
CHEM 4700	Agricultural Chemistry	3
CHEM 4900	Chemical Assistance for Improving Crops	4
CHEM 4915	Practice in Industrial Chemistry	3

Minor in Agricultural Chemistry

This minor is for students of the Bachelor of Science in Industrial Chemistry, Biology, Biotechnology, Microbiology, Forensic Sciences and Forensic Biology.

The Bayamón Campus is authorized to offer this minor.

Requirements for the Minor in Agricultural Chemistry - 20 credits

Courses for the Minor in Agricultural Chemistry

CHEM 2250	Chemistry and Soil Structure	3
CHEM 3320	Analytical Chemistry	4
CHEM 4003	Industrial Chemistry	3
CHEM 4700	Agricultural Chemistry	3
CHEM 4900	Chemical Assistance for Improving Crops	4

Minor in Chemistry

The Arecibo, Bayamón, Guayama, Metropolitan and San Germán campuses are authorized to offer this minor.

Requirements for the Minor in Chemistry - 24 credits

Courses for the Minor in Chemistry

In order to certify a minor in chemistry, students must have approved a minimum of twenty-four (24) credits from the chemistry curriculum (courses CHEM) of which, a minimum of nine (9) credits must be from 3000 or 4000 level courses.

It is the responsibility of the student to meet the course requirements for the minor.

Minor in Industrial Chemistry

Intended for students of Natural Sciences, except those in Industrial Chemistry.

The Bayamón Campus is authorized to offer this Minor.

Requirements for the Minor in Industrial Chemistry - 21 credits

Courses for the Minor in Industrial Chemistry

CHEM 3320	Analytical Chemistry	4
CHEM 4170	Separation Methods	3
MATH 2251	Calculus I	5

Note: Nine (9) additional credits in Chemistry at the CHEM 3000 or 4000 level are required.

Forensic Informatics (BS)

The Bachelor of Science in Forensic Informatic presents an interdisciplinary curriculum that aims to develop in students the basic skills and the knowledge necessary to collect, handle and preserve digital evidence appropriately. The Program seeks to develop students' skills in computational security so that they are able to analyze, implement and evaluate an information system that fulfills the legal and ethical aspects of the discipline.

The Bayamón Campus is authorized to offer this program.

Competencies Profile of Graduates

The Program is designed to develop the competencies that will enable students to:

Knowledge

1. Know the general principles of mathematics, physics and forensic sciences as they apply to the investigation of cybernetic crimes.

2. Recognize patterns of human behavior.

3. Understand the impact of technology when designing investigative processes and in the analysis of an information system and of the evidence contained therein.

Skills

1. Use the tools and skills of computational security to analyze, implement and evaluate an information system that is in compliance with the law.

2. Apply computer sciences to an investigation of cybernetic crimes.

3. Apply forensic techniques and procedures according to standard protocol and by using appropriate tools in the analysis of digital evidence.

4. Manage complex infrastructures of information network systems.

5. Analyze the complex infrastructures of network systems, including hardware and software architecture.

Attitudes

1. Respect the ethical, moral and legal aspects of the discipline.

2. Appreciate teamwork.

Requirements for the Bachelor of Science in Sciences in Forensic Informatics

General Education Requirements	45 credits
Major Requirements	26 credits
Related Requirements	45 credits
Elective Courses	6 credits
Total	122 credits

General Education Requirements - 45 credits

Forty-five (45) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees." Students of this Program will take GEMA 1200 in the category of Basic Skills in Mathematics. Students of this Program are exempt from taking courses in the Scientific and Technological Context category.

Major Requirements - 26 credits

FORS 2000	Introduction to Forensic Science	3
FORS 3300	Security in Informatic Networks	3
FORS 3350	Computational Security	3
FORS 3450	Digital Evidence	3
FORS 397_	Special Topics	3
FORS 4100	Multimedia Analysis	4
FORS 4421	Forensic Investigation I	3
FORS 4910	Forensic Practice	3
FORS 4960	Integration Seminar	1

Related Requirements - 45 credits

BIOL 1101	General Biology I	3
BIOL 1103	Biology Skills Laboratory I	1
COMP 2110	Introduction to Computer Science	3
COMP 2120	Programming Logic	3
COMP 2315	Structured Programming	3
COTN 1220	Data Communication	3
COTN 2121	Network Administration I	3
COTN 2122	Network Administration II	3
CHEM 1111	General Chemistry I	4
CJUS 1000	Introduction to Criminology	3
CJUS 3025	Criminal Law	3
MATH 1500	Precalculus	5
PHYS 3001	General Physics I	4
PHYS 3002	General Physics II	4

Information Technology (BBA)

Information Technology (BBA)

The Bachelor's Degree Program in Business Administration in Information Technology provides practical preparation for administrators in the areas of Information Technology.

The Program has been designed to facilitate a complete understanding of the goals, functions and operations of business organizations, their information needs and the role of information systems in such organizations. The Program also provides for the development of analytical and technical skills to identify, study and resolve problems of information control as well as the development of the communication skills that allow for effective interaction with other members of a business organization, especially the users and implementers of computerized systems of management information. The Program also provides a background for the continuation of graduate studies and professional development in this discipline.

Students must pass the required core and major courses with a minimum grade of C.

This Program, in the San Germán Campus, is accredited by the *International Assembly for Collegiate Business Education (IACBE),* located on 11374 Strang Line Road, Lenexa, Kansas, USA.

The Aguadilla, Metropolitan, and San Germán campuses are authorized to offer this Program. The Aguadilla Campus is authorized to offer this Program through online education.

Competencies Profile of Graduates

This Program is designed to develop the competencies that will enable students to:

Knowledge

Demonstrate to knowledge and understanding of:

1. foundations and trends in the field of information technology.

2. aspects of audit and security of the information technology.

3. legal implications for the implementation and use of information technologies.

4. processes to carry out electronic businesses,

Enterprise Resource Planning and the management of information system projects.

5. trends in programming languages, data bases and communications networks.

Skills

1. Program applications using computer languages.

2. Analyze the requirements for the implementation of computer networks in harmony with the company's needs.

3. Apply analytical techniques that will allow students to make decisions in a rational and efficient way.

4. Develop projects based on the information system development cycle and on the administration of new technologies.

5. Develop applications using the resources and services of the Internet that will allow the expansion of the company's functions at the global level.

6. Design data bases that will allow the development of enterprise applications.

7. Recommend policies of audit and security in information systems.

8. Communicate recommendations and findings with clarity and precision, both orally and in writing.

Attitudes

Demonstrate:

1. leadership under ethical and legal principles related to the field of information technology.

2. capacity to perform collaborative work.

3. a positive attitude towards professional improvement.

Requirements for the Bachelor of Business Administration Degree in Information Technology

General Education Requirements	48 credits
Core Course Requirements	35 credits
Major Requirements	36 credits
Elective Courses	3 credits
Total	122 credits

General Education Requirements - 48 credits

Forty-eight (48) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees." Students in this Program will take GEMA 1200 in the Basic Mathematical Skills category.

Core Course Requirements - 35 credits

ACCT 1161	Introduction to Financial Accounting	4
ACCT 1162	Introduction to Managerial Accounting	4
BADM 1900	Fundamentals of Business Management	3
FINA 2101	Corporate Finance I	3
MAEC 2140	Fundamentals of Quantitative Methods	3
MAEC 2211	Principles of Microeconomics	3
MAEC 2212	Principles of Macroeconomics	3
MAEC 2221	Basic Statistics	3
MAEC 2222	Managerial Statistics	3
MKTG 1210	Introduction to Marketing	3
OMSY 3030	Business Communication in Spanish Or	3
OMSY 3040	Business Communication in English	3

Major Requirements - 36 credits

ITEC 1100	Introduction to Information Technology	3
ITEC 1200	Programming Algorithms	3
ITEC 2310	Visual Programming in Information Systems	3
ITEC 2450	Development of Web Page	3
ITEC 2560	Mobile Applications Programming	3
ITEC 3130	Database Design and Management	3
ITEC 3350	Telecommunications and Business Networks	3
ITEC 3420	Information System Analysis	3

	and Design	
ITEC 3570	Programming of Internet	3
ITEC 4500	Auditing and Security of Information Systems	3
ITEC 4915	Practicum Or	3
ITEC 4916	Project	3
ITEC 4970	Seminar in Information Systems	3

Credit may be granted for the practicum (ITEC 4915) to students who have had a satisfactory work experience and who apply for it in writing to the director of the academic department. This credit will be subject to the following:

1. Students have been working full-time in a company for a minimum of two consecutive years within the three-year period immediately prior to the date of their request.

2. Students submit a certification and letter from their employer or the Human Resources Office of their place of employment which specifies:

    a. Years of experience.

    b. Period of the time employed.

    c. Position or positions held.

    d. Job description.

    e. Copies of evaluations received.

    f. Any other evidence of their professional performance during their employment.

3. Students pay 50% of the tuition costs of the practicum course for which they are requesting credit.

The experience recognized by the University corresponds to the requirement for the degree that the student hopes to obtain from the Institution.

Minor in Information Technology

This minor aims to enable students to expand their knowledge of information needs and the role of technology in business organizations.

The Metropolitan and San Germán campus are authorized to offer this minor.

Requirements for the Minor in Information Technology - 21 credits

Courses for the Minor in Information Technology

ITEC 1100	Introduction to Information Technology	3
ITEC 1200	Programming Algorithms	3
ITEC 2310	Visual Programming in Information Systems	3
ITEC 2450	Development of Web Page	3
ITEC 3130	Database Design and Management	3
ITEC 3350	Telecommunications and Business Networks	3
ITEC 3420	Information System Analysis and Design	3

Institutional Chaplaincy (AA)

The Associate of Arts Degree in Institutional Chaplaincy aspires to develop religious professionals committed with Institutional Chaplaincy, and who have the competencies, knowledge, skills and ministerial ethical attitudes that enable them to carry out effective interventions in the clinical, prison, educational, labor and ecclesiastical environment, among others.

The Fajardo and Metropolitan campuses are authorized to offer this Program. In addition, the Metropolitan Campus is authorized to offer the associate degree at the University Center in Caguas.

Competencies Profile of Graduates

This Program is designed to develop the competencies that will enable students to:

Knowledge

1. Know history and the fundamental principles Clinical Chaplaincy in the United States, Puerto Rico and Ibero-America.

2. Demonstrate knowledge of the techniques of "fatigue by compassion".

3. Know the techniques of intervention and handling of crises.

4. Know the theories of pastoral care in different institutional clinical scenarios.

Skills

1. Develop strategic plans of spiritual/pastoral care.

2. Design care plans with clinical-religious contents according to the modern techniques approved by the School of Pastoral Supervisors and Therapists.

3. Contextually apply the basic theories of institutional the clinical chaplaincy.

4. Implement the theories of pastoral care in different institutional scenarios.

5. Use techniques of intervention and administration of crises in group processes.

Attitudes

1. Show sensitivity and empathy within the religious plurality.

2. Appreciate tolerance for integration and work in interdisciplinary groups.

Requirements for the Associate of Arts Degree in Institutional Chaplaincy

General Education Requirements	24 credits
Major Requirements	36 credits
Total	60 credits

General Education Requirements - 24 credits

GESP	Spanish - Select 6 credits from the GESP category	6
GEEN	English - Select 6 credits from the GEEN category	6
GEP-GEMA 1000	Quantitative Reasoning	3
GEP-GEHS 2010	Historical Process of Contemporary Puerto Rico	3
GEP-GECF 1010	Introduction to the Christian Faith	3
GEP-GEIC 1010	Information and Computing Technologies	3

Major Requirements - 36 credits

CHAP 1101	History of Chaplaincy	3
CHAP 1102	Theory of Institutional Chaplaincy	3
CHAP 2101	Spirituality, Religion and Mental Health	3
CHAP 2102	Clinic-Theological Reflection Methods of Pastoral Care	3
CHAP 2103	Theories of Pastoral Clinical Education	3
CHAP 2104	Didactic Theories and their Clinical Application to Chaplaincy	3
CHAP 2105	Intervention and Management of Crisis	3
CHAP 2106	Intervention in Pastoral Care	3
CHAP 2107	Pastoral Care and Social Crisis	3
CHAP 2108	Professional Practice	3
CHAP 2109	Integration Seminar	3
PSYC 1051	General Psychology I	3

International Business (BBA)

International Business (BBA)

The International Business Program is designed to offer students the necessary knowledge to perform the basic managerial functions within a conceptual framework of international dimensions. The theoretical and practical academic activities aim to prepare students in the search of alternatives to promote international business within a global perspective. Students must pass the required core and major courses with a minimum grade of C.

The Metropolitan Campus is authorized to offer this Program through online education.

Competencies Profile of Graduates

The program is designed to allow the development of the following competencies:

Knowledge

1. Demonstrate a multidisciplinary approach to doing highly professional work both locally and internationally.

2. Identify the dynamics and causes of changes that occur in national and international markets and determine how they affect business operation.

3. Recognize the processes related to business operation in all links of the production-distribution chain and their interaction with global markets.

Skills

1. Complete comparative analyzes that allow rational and efficient decision-making in relation to the company and its growth possibilities.

2. Use technology in the management, control and international projection processes of the company.

3. Distinguish the implications of international treaties and regulations and federal and state regulations

related to international trade in the administration of companies and organizations.

Attitudes

1. Demonstrate the sense of social responsibility exhibited by a business leader.

2. Act reliably, with honesty and responsibility in the management of economic and administrative affairs.

3. Demonstrate cultural sensitivity for effective communication.

Requirements for the Bachelor of Business Administration Degree in International Business

General Education Requirements	48 credits
Core Course Requirements	38 credits
Major Requirements	39 credits
Elective Courses	3 credits
Total	128 credits

General Education Requirements - 48 credits

Forty-eight (48) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees." Students in this Program will take GEMA 1200 in the Basic Mathematical Skills category.

Core Course Requirements - 38 credits

ACCT 1161	Introduction to Financial Accounting	4
ACCT 1162	Introduction to Managerial Accounting	4
BADM 1900	Fundamentals of Business Management	3
BADM 3900	Information Systems in Organizations	3
FINA 2101	Corporate Finance I	3
MAEC 2140	Fundamentals of Quantitative Methods	3
MAEC 2211	Principles of Microeconomics	3
MAEC 2212	Principles of Macroeconomics	3
MAEC 2221	Basic Statistics	3
MAEC 2222	Managerial Statistics	3
MKTG 1210	Introduction to Marketing	3
OMSY 3030	Business Communication in Spanish Or	3
OMSY 3040	Business Communication in English	3

Major Requirements - 39 credits

INTB 2100	Introduction to International Business	3
INTB 2200	Cultural Awareness in International Business	3
INTB 2301	Principles of Imports and Exports	3
INTB 2302	Licenses and Regulations for Imports and Exports	3
INTB 3330	Management of Human Resources at the International Level	3
INTB 3600	International Business Environment in the Americas, Europe and the Pacific	3
INTB 3710	International Sales Contracts and Terms of International Business	3
INTB 3750	Financial Institutions and International Investments	3
INTB 3800	Administration of International Transportation: Ocean, Air and Land	3
INTB 3900	Management Information Systems in International Business	3
INTB 4220	International Business Strategy	3
INTB 4911	Practice in International Business	3
MAEC 3243	International Economics	3

Minor in International Business

The Metropolitan Campus is authorized to offer this minor through online education.

The Arecibo Campus is authorized to offer this minor through face-to-face education.

Requirements for the Minor in International Business - 18 credits

Courses for the Minor in International Business

INTB 2100	Introduction to International Business	3
INTB 2200	Cultural Awareness in International Business	3
INTB 2301	Principles of Imports and Exports	3
INTB 3330	Management of Human Resources at the International Level	3
INTB 3600	International Business	3

INTB 4220	Environment in the Americas, Europe and the Pacific International Business Strategy	3

Management and Organizational Innovation (BBA)

Management and Organizational Innovation (BBA)

The Management and Organizational Innovation study program is designed to provide the student with the principles, concepts, and applications of this discipline. The Program's objective aspires the development of managerial competencies, aimed at organizational transformation.

The student must pass the required core and major courses with a minimum grade of C.

The Ponce Campus is authorized to offer this Program through online education.

Competencies Profile of Graduates

The Bachelor Program in Business Administration in Management and Organizational Innovation is designed to develop the competencies which allow the student to:

Knowledge

Demonstrate knowledge and understanding of:

1. the functions and management theories of an administrator.

2. the main organizational designs, ranging from the traditional to contemporary ones.

3. the advantages of innovations and organizational changes.

4. the technological advances that influence contemporary organizations.

Skills

1. Develop innovative strategies in achieving organizational objectives.

2. Express capability in using innovative and creative approaches to problem solving.

3. Demonstrate the ability to maintain effective interpersonal relationships inside and outside the company.

4. Use technology to generate necessary reports for the planning, financial control and decision-making processes.

Attitudes

1. Exhibit a high degree of ethics, responsibility, and commitment as a leader.

2. Recognize continuous learning as a determining factor in the understanding and transformation of work environments.

3. Recognize entrepreneurship as a work alternative.

Requirements for the Bachelor of Business Administration Degree in Management and Organizational Innovation

General Education Requirements	48 credits
Core Course Requirements	38 credits
Major Requirements	35 credits
Elective Courses	3 credits
Total	124 credits

General Education Requirements - 48 credits

Forty-eight (48) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees." Students in this Program will take GEMA 1200 in the Basic Mathematical Skills category.

Core Course Requirements - 38 credits

ACCT 1161	Introduction to Financial Accounting	4
ACCT 1162	Introduction to Managerial Accounting	4
BADM 1900	Fundamentals of Business Management	3
BADM 3900	Information Systems in Organizations	3
BADM 4300	Managerial Economics	3
FINA 2101	Corporate Finance I	3
MAEC 2140	Fundamentals of Quantitative Methods	3
MAEC 2211	Principles of Microeconomics	3
MAEC 2212	Principles of Macroeconomics	3
MAEC 2221	Basic Statistics	3
MAEC 2222	Managerial Statistics	3
MKTG 1210	Introduction to Marketing	3

Major Requirements - 35 credits

HRMA 3000	Organization Behavior	3
BADM 3313	The Law and The Businesses	3
HRMA 2100	Human Resource Administration	3
OPMS 3820	Management Sciences	3
ENTR 2200	Foundations of Entrepreneurship	3
ENTR 3900	Entrepreneurial and Managerial Strategies	3
MGOI 2100	Organizational Design	3
MGOI 3240	Ethics and Social Responsibility	3
MGOI 3300	Leadership and Organizational Change	3
MGOI 3400	Organizational Communication	3
MGOI 4245	Innovation and Creativity	3
MGOI 4900	Management Simulation	2

Minor in Management and Organizational Innovation

The Minor in Management and Organizational Innovation is for all students of the institution who wish to possess skills in the management area. The curriculum facilitates the student's identification of opportunities that involve the application of skills in innovation, offering creative solutions for the development of entrepreneurial initiatives, self-employment or managing a business.

The Ponce Campus is authorized to offer this minor through online education.

Requirements for the Minor in Management and Organizational Innovation - 24 credits

Courses for the Minor in Management and Organizational Innovation

BADM 1900	Fundamentals of Business Management	3
HRMA 3000	Organization Behavior	3
ENTR 2200	Foundations of Entrepreneurship	3
MKTG 1210	Introduction to Marketing	3
ENTR 3900	Entrepreneurial and Managerial Strategies	3
MGOI 2100	Organizational Design	3
MGOI 3300	Leadership and Organizational Change	3
MGOI 4245	Innovation and Creativity	3

Managerial Economics (BBA)

Managerial Economics (BBA)

The major in managerial economics is designed to prepare students to analyze the principles of economics, finance, accounting, information systems and marketing and how to apply them to the situations and problems that arise in the administration of companies within the economic and social context of the country.

It is also designed to prepare professionals with managerial skills, enterprising capacity and to be highly competitive in order to function in the globalized world and to contribute to the development of Puerto Rico.

Students must pass the required core and major courses with a minimum grade of C.

The Metropolitan Campus is authorized to offer this Program.

Competencies Profile of Graduates

The program is designed to permit the development of the following competencies:

Knowledge

To demonstrate knowledge and understanding of:

1. the dynamics and causes of the changes that happen in the national and international markets and how these affect the operations of the company.

2. the processes related to the enterprise operation in all the links of the production-distribution chain and their interaction in the different markets.

3. the possible effects of public policies on the enterprise economic activity.

Skills

1. To identify the quantitative tools applicable to the analysis of the contemporary economic phenomena.

2. To evaluate the competitive position of the company and its possibilities for growth.

3. To demonstrate the capacity for clear, precise and logical communication on economic subjects.

4. To produce reports, graphs and data bases that can be used in the processes of management and control of the company, using the appropriate technology.

Attitudes

1. To value the social responsibility of the enterprise leader.

Requirements for the Bachelor of Business Administration Degree in Managerial Economics

General Education Requirements	48 credits
Core Course Requirements	41 credits
Major Requirements	21 credits
Prescribed Distributive Requirements	6 credits
Elective Courses	3 credits
Total	119 credits

General Education Requirements - 48 credits

Forty-eight (48) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees." Students in this Program will take GEMA 1200 in the Basic Mathematical Skills category.

Core Course Requirements - 41 credits

ACCT 1161	Introduction to Financial Accounting	4
ACCT 1162	Introduction to Managerial Accounting	4
BADM 1900	Fundamentals of Business Management	3
BADM 3900	Information Systems in Organizations	3
BADM 4300	Managerial Economics	3
FINA 2101	Corporate Finance I	3
MAEC 2140	Fundamentals of Quantitative Methods	3
MAEC 2211	Principles of Microeconomics	3
MAEC 2212	Principles of Macroeconomics	3
MAEC 2221	Basic Statistics	3
MAEC 2222	Managerial Statistics	3
MKTG 1210	Introduction to Marketing	3
OMSY 3030	Business Communication in Spanish Or	3
OMSY 3040	Business Communication in English	3

Major Requirements - 21 credits

MAEC 3234	Labor Economics	3
MAEC 3236	Public Finance and Fiscal Policy	3
MAEC 3243	International Economics	3

MAEC 4213	Macroeconomics Applied to Business	3
ENTR 2200	Foundations of Entrepreneurship	3
ENTR 3900	Entrepreneurial and Managerial Strategies	3
ENTR 4400	Design and Development of a Business Plan	3

Prescribed Distributive Requirements - 6 credits

Students will select six (6) credits from the following courses:

MAEC 1213	History of Economic Thought	3
MAEC 3240	Mathematics for Decision-Making	3
MAEC 3330	Economic Development of Puerto Rico	3
MAEC 4220	Introduction to Econometrics	3
FINA 2101	Corporate Finance I	3
FINA 3235	Money and Banking	3
FINA 3300	Financial Markets	3
FINA 3700	Fundamentals of Investment	3
MKTG 4243	Marketing Research	3
OPMS 3340	Management Policies and Strategies	3

Minor in Managerial Economics

The Metropolitan Campus is authorized to offer this minor.

Requirements for the Minor in Managerial Economics - 24 credits

Courses for the Minor in Managerial Economics

MAEC 1213	History of Economic Thought	3
MAEC 2211	Principles of Microeconomics	3
MAEC 2212	Principles of Macroeconomics	3
MAEC 2320	Political Economy	3
MAEC 3234	Labor Economics	3
FINA 3235	Money and Banking	3
MAEC 3236	Public Finance and Fiscal Policy	3
BADM 4300	Managerial Economics	3

Marine Sciences (BS)

Marine Sciences (BS)

The Bachelor of Science in Marine Sciences presents an interdisciplinary curriculum, that aspires to develop in the student the knowledge, skills and fundamental attitudes of the marine sciences, and the application of these to environmental scientific research, to the management of

marine resources, the responsible use of these, and the conservation of the marine and coastal ecosystems.

The Bayamón Campus is authorized to offer this program.

Competencies Profile of Graduates

The Program is designed to develop the competencies that will enable students to demonstrate:

Knowledge

Know and understand:

1. General aspects in mathematics, physics, geology, chemistry, and biology related to the marine sciences.

2. The chemical, physical, geological and biological processes, and the anthropological aspects that occur in the coastal and marine environment.

3. The general structure of the Caribbean coastal and marine ecosystems.

4. The core concepts of the different sub-disciplines of the marine sciences.

5. The role of the different local, federal and international agencies and organizations in research, management and the protection of the marine and coastal environment, and its different components.

6. Research methods applied to the marine sciences.

Skills

1. Apply the general knowledge of natural sciences to the critical interpretation of data and information about the Caribbean coastal and marine ecosystems.

2. Use techniques and methods of basic research applied to the marine sciences.

3. Identify the impact of public policies on health, management and protection of the marine and coastal environment.

4. Recognize the processes of use and management of marine resources, and be prepared to contribute information that supports the design of strategies for the responsible use and conservation of the marine and coastal ecosystems.

Attitudes

1. Understand the legal and ethical aspects of the discipline.

2. Act as a sensible professional in regards to marine and costal environmental problems.

3. Properly incorporate themselves into the pertinent work group, while respecting the values of honesty, social wellbeing and professional ethics.

Requirements for the Bachelor of Science in Marine Sciences

General Education Requirements	45 credits
Major Requirements	19 credits
Related Requirements	52 credits
Prescribed Distributed Requirements	6 credits
Elective Courses	3 credits
Total	125 credits

General Education Requirements - 45 credits

Forty-five (45) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees." Students of this Program will take GEMA 1200 in the category of Basic Skills in Mathematics. Students of this Program are exempt from taking courses in the Scientific and Technological Context category.

Major Requirements - 19 credits

MASC 1600	Fundamentals of Oceanography	3
MASC 2610	Introduction to Geology	3
MASC 3600	Marine Biology	3
MASC 3603	Marine Biology Laboratory	1
MASC 3650	Advanced Oceanography	3
MASC 3930	Marine Research Methods	3
MASC 4050	Marine Resource Conservation and Management	3

Related Requirements - 52 credits

BIOL 1101	General Biology I	3
BIOL 1102	General Biology II	3
BIOL 1103	Biology Skills Laboratory I	1
BIOL 2010	Fundamentals of Vegetable and Animal Biology	4
BIOL 2153	Biostatistics	3
BIOL 3010	Genetics	3
BIOL 3220	Biochemistry	3
BIOL 3503	Ecology	3
CHEM 1111	General Chemistry I	4
CHEM 2212	General Chemistry II	4
CHEM 2221	Organic Chemistry I	4
CHEM 2222	Organic Chemistry II	4

MATH 1500	Precalculus	5
PHYS 3001	General Physics I	4
PHYS 3002	General Physics II	4

Distributive Prescribed Requirements - 6 credits

Students will select six (6) credits from the following courses:

BIOL 4403	Evolution	3
BIOL 4604	Cellular and Molecular Biology	3
MASC 2630	Diving in Marine Sciences	3
MASC 2640	Nautical Sciences	3
MASC 3610	Marine Botany	3
MASC 3620	Ichthyology	3
MASC 397_	Special Topics	3
MASC 4030	Coral Reef Ecology	3
MASC 4040	Biology of Marine Mammals, Birds and Turtles	3
MASC 4610	Coastal Geomorphology	3
MASC 4910	Practicum in Marine Sciences	3
MASC 4931	Marine Research	3
MATH 2250	Calculus for Biology and Environmental Sciences	3

Minor in Marine Sciences

The Bayamón Campus is authorized to offer this minor.

This minor may only be declared by students admitted to one of the bachelor's programs in natural sciences or related areas.

Requirements for the Minor in Marine Sciences - 21 credits

Courses for the Minor in Marine Sciences

Students will be able to opt for a minor in Marine Sciences by taking the 18 credits indicated for this minor. In order to complete the minor, they must pass the following courses:

MASC 1600	Fundamentals of Oceanography	3
MASC 2610	Introduction to Geology	3
MASC 3600	Marine Biology	3
MASC 3650	Advanced Oceanography	3

And select two (2) courses from the following courses:

MASC 2660	Geological Oceanography	3
MASC 3060	Chemical Oceanography	3
MASC 3660	Biological Oceanography	3
MASC 4660	Physical Oceanography	3

And select two (2) courses from the following courses:

| MASC 2630 | Diving in Marine Sciences | 3 |

MASC 2640	Nautical Sciences	3
MASC 3610	Marine Botany	3
MASC 3620	Ichthyology	3
MASC 3930	Marine Research Methods	3
MASC 397_	Special Topics	3
MASC 4030	Coral Reef Ecology	3
MASC 4040	Biology of Marine Mammals, Birds and Turtles	3
MASC 4050	Marine Resource Conservation and Management	3
MASC 4610	Coastal Geomorphology	3
MASC 4931	Marine Research	3
MASC 4932	MARINE RESEARCH II	3
MASC 4910	Practicum in Marine Sciences	3

Marketing (BBA)

Marketing (BBA)

The Bachelor of Business Administration in Marketing is designed to develop in students the knowledge, skills, and values competencies required in the marketing industry.

The program aims to form entrepreneurial professionals who can function in a globalized and diverse world.

The graduate of this program will demonstrate knowledge and understanding of the fundamentals of the marketing profession. Also, will be able to manifest skills and attitudes that allow her to develop better as a person and a marketing professional.

The student must approve the required core and major courses with a minimum grade of C.

This Program, in the San Germán Campus, is accredited by the *International Assembly for Collegiate Business Education (IACBE),* located on 11374 Strang Line Road, Lenexa, Kansas, USA.

This Program, in the Bayamón Campus, is accredited by the *Accreditation Council for Business Schools and Programs (ACBSP)* (https://www.acbsp.org/).

The Aguadilla, Arecibo, Bayamón, Fajardo, Metropolitan, Ponce and San Germán campuses are authorized to offer this Program. The Aguadilla and Ponce campuses are also authorized to offer this Program through online education.

Program Goals

The Program aims to achieve the following goals:

1. Develop professionals with the required knowledge in the marketing discipline.

2. Promote research, information management and the use of technology as a means to generate knowledge that results in the improvement of marketing practices.

3. Develop critical and understanding thinking towards problems related to the field of marketing.

4. Promote the solution of problems related to the marketing field within the ethical, legal and social responsibility framework.

5. Develop professionals committed to their professional improvement as a means to achieve better practice in the field of marketing.

Program Objectives

The Program aims to achieve the following objectives:

1. Provide theoretical knowledge related to the marketing field.

2. Use the Marketing Information System and technological advances for the production and construction of knowledge in the areas that compose the marketing field.

3. Apply the knowledge and skills of the discipline in solving problems and making decisions related to the marketing area.

4. Integrate innovation, creativity, values and ethical, legal and social responsibility principles related to the marketing field into professional practice.

5. Demonstrate commitment to continuous improvement of the professional skills required in the marketing field.

Competencies Profile of Graduates

This Program is designed to develop the competencies that will enable students to:

Knowledge

Demonstrate knowledge and comprehension of:

1. the principles, concepts, responsibilities and practices that allow to do a market analysis for decision making.

2. the innovations and changes in the research and technological field.

3. the interdisciplinary foundations for the formation a

globalizing vision.

Skills

1. Apply research, information and technological advances as resources in solving problems related to the marketing area.

2. Manage situations collaboratively in the marketing field through the development of critical and strategic thinking. It includes the development of creativity, innovation and technology processes.

3. Identify and take advantage of growth opportunities at a domestic and global level that generate value, growth and profits.

Attitudes

1. Exhibit a creatibe, innovative, ethical, legal, and social responsibility attitude in the process of decision making in the marketing area.

2. Assume leadership roles and professional responsibility in the marketing area.

Requirements for the Bachelor of Business Administration Degree in Marketing

General Education Requirements	48 credits
Core Course Requirements	41 credits
Major Requirements	24 credits
Prescribed Distributive Requirements	6 credits
Elective Courses	3 credits
Total	122 credits

General Education Requirements - 48 credits

Forty-eight (48) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees." Students in this Program will take GEMA 1200 in the Basic Mathematical Skills category.

Core Course Requirements - 41 credits

ACCT 1161	Introduction to Financial Accounting	4
ACCT 1162	Introduction to Managerial Accounting	4
BADM 1900	Fundamentals of Business Management	3
BADM 3900	Information Systems in Organizations	3
BADM 4300	Managerial Economics	3
FINA 2101	Corporate Finance I	3

MAEC 2140	Fundamentals of Quantitative Methods	3
MAEC 2211	Principles of Microeconomics	3
MAEC 2212	Principles of Macroeconomics	3
MAEC 2221	Basic Statistics	3
MAEC 2222	Managerial Statistics	3
MKTG 1210	Introduction to Marketing	3
OMSY 3030	Business Communication in Spanish Or	3
OMSY 3040	Business Communication in English	3

Major Requirements - 24 credits

MKTG 2220	Marketing Management	3
MKTG 2223	Consumer Behavior	3
MKTG 3230	Integrated Marketing Communication	3
MKTG 4240	Strategic Marketing	3
MKTG 4243	Marketing Research	3
MKTG 4244	Global Marketing	3
MKTG 4245	Digital Marketing	3
MKTG 4973	Integrated Seminar in Marketing	3

Prescribed Distributive Requirements - 6 credits

Select six (6) additional credits in Marketing courses from the 3000 or 4000 levels:

MKTG 3233	Public Relations in Organizations	3
MKTG 3234	Personal Sales	3
MKTG 3235	Sales Management	3
MKTG 3236	Retail Selling	3
MKTG 3237	Service Marketing	3
MKTG 3238	Principles of Publicity	3
MKTG 3239	Social Marketing	3
MKTG 3240	Ethics in Marketing	3
MKTG 3241	Graphic Art in Marketing	3
MKTG 3242	Social Media Marketing	3
MKTG 3243	Distribution Logistics	3
MKTG 4246	Product Management	3
MKTG 4248	Small Business Marketing	3
MKTG 4820	Analytical Marketing	3
MKTG 4910	Supervised Practice in Marketing	3

Minor in Communication and Public Relations

The Minor in Communication and Public Relations aspires to prepare students so they may be directors of communications in organizations and be able to produce effective messages through mass media.

The Metropolitan Campus is authorized to offer this minor.

Requirements for the Minor in Communication and Public Relations - 24 credits

Courses for the Minor in Communication and Public Relations

COMU 1000	Introduction to Communications	3
COMU 1020	Introduction to Communication Media	3
COMU 3013	Public Relations Plan	3
BADM 3300	Communication in Management	3
MAMS 2630	Public Relations	3
MKTG 1210	Introduction to Marketing	3
MKTG 3230	Integrated Marketing Communication	3
MKTG 3233	Public Relations in Organizations	3

Minor in Insurance Sales

The Minor in Insurance Sales aims to develop the following competencies: to propose alternatives to protect the goods and wealth of people and companies, marketing methods applied to the insurance industry. It also introduces students to the basic concepts in the insurances industry and to the available products as alternatives to manage risk.

The Metropolitan Campus is authorized to offer this minor.

Requirements for the Minor in Insurance Sales - 18 credits

Courses for the Minor in Insurance Sales

INSR 1400	Introduction to Risk and Insurance	3
INSR 1500	Introduction to Disability Life Insurance	3
INSR 1600	Life Insurance	3
INSR 1800	Personal Uses for Multilinear Insurance	3
MKTG 3234	Personal Sales	3
MKTG 3235	Sales Management	3

Minor in Marketing

Students who wish to take this minor must have GEMA 1200 as a requisite.

The Aguadilla, Arecibo, Bayamón, Fajardo, Ponce, and San Germán campuses are authorized to offer this minor. The Ponce Campus is authorized to offer this minor through online education.

Requirements for the Minor in Marketing - 21 credits

Courses for the Minor in Marketing

MAEC 2221	Basic Statistics	3
MKTG 1210	Introduction to Marketing	3
MKTG 2220	Marketing Management	3
MKTG 2223	Consumer Behavior	3
MKTG 3230	Integrated Marketing Communication	3
MKTG 4240	Strategic Marketing	3
MKTG 4243	Marketing Research	3

Minor in Sales

The Arecibo, Bayamón and Ponce campuses are authorized to offer this Minor. The Ponce Campus is authorized to offer this minor through online education.

Requirements for the Minor in Sales - 21 credits

Courses for the Minor in Sales

MKTG 1210	Introduction to Marketing	3
MKTG 2220	Marketing Management	3
MKTG 2223	Consumer Behavior	3
MKTG 3230	Integrated Marketing Communication	3
MKTG 3234	Personal Sales	3
MKTG 3235	Sales Management	3
MKTG 3236	Retail Selling	3

Minor in Sports Marketing

The minor in Sport Marketing prepares the future professional in the application of marketing principles and processes to sports related services.

The Metropolitan Campus is authorized to offer this minor.

Requirements for the Minor in Sport Marketing - 18 credits

Course for the Minor in Sport Marketing

BADM 1900	Fundamentals of Business Management	3
MKTG 1210	Introduction to Marketing	3
MKTG 2223	Consumer Behavior	3
MKTG 3230	Integrated Marketing Communication	3
SRIM 1020	Foundations of Sports and Recreation	3

SRIM 2300	Introduction to Sports Marketing	3

Marketing for Digital Media (BBA)

The Bachelor of Business Administration in Marketing for Digital Media provides a practical preparation that fosters the development of technical skills and competencies that help to understand the role of marketing in electronic commerce and the knowledge of digital media in this field.

In addition, it develops analytical skills and techniques to identify, study and solve problems that allow the achievement of digital media strategies.

It will be a requirement for graduation from the program to pass all concentration courses with a minimum of C.

The Fajardo Campus is authorized to offer this program in campus and through online education.

Competency Profile of Graduates

Knowledge

Demonstrate knowledge and understanding of:

1. the basics of digital media marketing for decision making.

2. innovations to measure processes on the web.

3. positioning strategies in the most important search engines.

4. interdisciplinary approaches for the formation of a global vision.

Skills

1. Properly use the vocabulary inherent in the field of marketing for digital media in Spanish and English.

2. Apply quantitative and qualitative analysis in solving problems in the area of marketing for digital media.

3. Research various sources, select relevant material, organize and analyze information for decision making.

4. Work in a team and handle situations in the marketing field through the development of critical thinking.

Attitudes

1. Manifest an ethical, legal and social responsibility

attitude in the decision-making process in the area of marketing for digital media.

2. Show interest in continuing professional development.

Requirements for the Bachelor's Degree in Business Administration in Marketing for Digital Media

General Education Requirements	48 credits
Core Requirements	41 credits
Concentration Requirements	33 credits
Elective Courses	3 credits
Total	125 credits

General Education Requirements - 48 credits

Forty-eight (48) credits are required, as explained in the General Education Program Requirements section. Students in this Program will take GEMA 1200 in the Basic Mathematics Skills category.

Core Requirements - 41 credits

ACCT 1161	Introduction to Financial Accounting	4
ACCT 1162	Introduction to Managerial Accounting	4
BADM 1900	Fundamentals of Business Management	3
BADM 3900	Information Systems in Organizations	3
BADM 4300	Managerial Economics	3
FINA 2101	Corporate Finance I	3
MKTG 1210	Introduction to Marketing	3
MAEC 2140	Fundamentals of Quantitative Methods	3
MAEC 2211	Principles of Microeconomics	3
MAEC 2212	Principles of Macroeconomics	3
MAEC 2221	Basic Statistics	3
MAEC 2222	Managerial Statistics	3
OMSY 3030	Business Communication in Spanish Or	3
OMSY 3040	Business Communication in English	3

Concentration Requirements - 33 credits

MDME 1101	Fundamentals of Marketing for Digital Media	3
DGDM 1104	Analysis of Graphic media	3
MDME 2201	Development of Web Tools	3
MDME 2203	Search Engine Positioning	3

	Strategies	
MDME 3020	Marketing Strategies for Social Media	3
MDME 3045	Marketing for Email	3
MDME 3115	Content Design Strategy	3
MDME 4012	Web Analytics	3
MDME 4041	Inbound Marketing	3
MDME 4910	Marketing for Digital Media Practice	3
MDME 4973	Seminar in Marketing for Digital Media	3

Mathematics (BA)

Mathematics (BA)

The study program of the Bachelor of Arts Degree in Mathematics provides students the opportunities necessary to acquire the skills, knowledge of the fundamental concepts, the mastery of the mathematical processes and the reinforcement of the ethical values that prepare them to follow a career in mathematics related to teaching at the secondary school level or at any other level in which analytical skills are required. It also, prepares them to continue graduate studies. This Program provides an ample and flexible academic offering that permits students to acquire mastery of the competencies in algebra, analysis and applied mathematics, and aspires to incorporate diverse innovative methods in the curriculum that will respond to the needs and interests of the student in an individual manner. The goal of the Program is to prepare students who wish to pursue graduate studies or pursue a career that requires vast mathematical knowledge. For admission to this Program, students must have passed MATH 1500, Precalculus, with a minimum grade of C.

The Metropolitan and San Germán campuses are authorized to offer this Program. The Metropolitan Campus is authorized to offer this Program through online education.

Competencies Profile of Graduates

The program is designed to develop the professional competencies that will enable students to:

Knowledge

1. Demonstrate knowledge and understanding of the concepts and standard mathematical processes (numerical, algebraic and graphical) in a variety of situations.

2. Integrate logical reasoning, analysis, problems

solving, and mathematical processes in a variety of pure and applied contexts.

Skills

1. Communicate mathematical knowledge in a correctly and creative manner.

2. Use the appropriate technology to strengthen the understanding of the concepts and the solution of mathematical problems.

Attitudes

1. Affirm the value and the utility of mathematics in all aspects of the daily life and in team work.

2. Affirm the importance of having a proactive attitude towards mathematics, the ethical values of the profession and cultural and linguistic diversity in the labor environment.

Requirements for the Bachelor of Arts Degree in Mathematics

General Education Requirements	48 credits
Major Requirements	32 credits
Related Requirements	17 credits
Prescribed Distributive Requirements	12 credits
Elective Courses	11 credits
Total	120 credits

General Education Requirements - 48 credits

Forty-eight (48) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees." Students will take GEMA 1200 in the Basic Skills in Mathematics category.

Major Requirements - 32 credits

MATH 1500	Precalculus	5
MATH 2000	Discrete Methods	3
MATH 2251	Calculus I	5
MATH 2252	Calculus II	4
MATH 2380	Topics in Geometry	3
MATH 2400	The Language of Mathematics	3
MATH 3130	Theory of Numbers	3
MATH 3350	Linear Algebra	3
MATH 4100	Applied Algebra	3
	Or	
MATH 4391	Abstract Algebra I	3

Related Requirements - 17 credits

PHYS 3001	General Physics I	4
PHYS 3002	General Physics II	4
STAT 1201	Statistics I	3
STAT 1202	Statistics II	3
COMP 2120	Programming Logic	3

Prescribed Distributive Requirements - 12 credits

Select twelve (12) credits from the following courses:

MATH 3000	Sampling Techniques	3
MATH 3060	Nonparametric Statistics	3
MATH 3091	Mathematical Statistics I	3
MATH 3250	Calculus III	3
MATH 3400	Differential Equations	3
MATH 4151	Numerical Analysis I	3
MATH 4260	Operational Research	3
MATH 4430	Seminar for Secondary School Teachers	3
MATH 4550	Advanced Calculus	3

Note: The MATH 4430 course is recommended for those students of this program interested in the area of mathematics teaching at the high school level.

Minor in Statistics

The minor in statistics is intended for all students who wish to enter this field, including those committed to research work or to the implementation of statistical methods, as well as those that wish to expand in the knowledge of the aspects related to the analysis of statistical information and its application.

The Metropolitan Campus is authorized to offer this minor.

Requirements for the Minor in Statistics - 20 credits

Courses for the Minor in Statistics

MATH 1500	Precalculus	5
MATH 2100	Introduction to Probability and Statistics	3
MATH 2200	Combinatory Analyses and Probability	3
MATH 2300	Statistical Inference	3
MATH 3000	Sampling Techniques	3
MATH 3060	Nonparametric Statistics	3

Note: Students whose academic program does not require GEMA 1200, must take the same or have an equivalent course of Algebra before taking MATH 1500.

Mathematics (BS)

The Bachelor of Science in Mathematics is a program aimed at training professionals committed to the service

and the discipline they have selected. It proposes to prepare competent professionals who have a theoretical base and who are familiar with the methods of research in mathematics, as well as the areas of mathematical application. The goal of the Program is to prepare students who wish to pursue graduate studies or pursue a career that requires vast mathematical knowledge. For admission to this Program, students must have passed MATH 1500, Precalculus, with a minimum grade of C.

The San Germán Campus is authorized to offer this program.

Competencies Profile of Graduates

The Bachelor of Science in Mathematics is designed to develop the skills that will enable the student to:

Knowledge

1. Identify the fundamentals of mathematics to apply them in problems solution.

2. Distinguish models or applications of mathematics.

3. To know the methods of practical, computational and graphic solution of the most important problems of mathematics, such as linear models, non-linear models, statistical models, combinatorial problems and problems of graph theory.

Skills

1. Relate different aspects and approaches of a problem to obtain a comprehensive solution.

2. Design and solve mathematical models for different industry and science problems.

3. Use modern technology to solve mathematical problems.

4. Apply computer knowledge and mathematical concepts to solve problems of the discipline.

Attitudes

1. Explain the importance of showing ethical, responsible behavior, respect for colleagues and the quest for an excellence service to society through their profession as a mathematician.

2. Ponder the importance of being part of the mathematical community, of participating in appropriate forums, and of belonging to professional associations that advance knowledge.

3. Assess the need to stay updated in the discipline and with the technological advances that affect the profession.

Requirements for the Bachelor of Science Degree in Mathematics

General Education Requirements	48 credits
Major Requirements	68 credits
Elective Courses	6 credits
Total	122 credits

General Education Requirements - 48 credits

Forty-eight (48) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees." Students will take the course GEMA 1200 in the Basic Skills in Mathematics category.

Major Requirements - 68 credits

MATH 1500	Precalculus	5
MATH 2000	Discrete Methods	3
MATH 2100	Introduction to Probability and Statistics	3
MATH 2251	Calculus I	5
MATH 2252	Calculus II	4
MATH 2380	Topics in Geometry	3
MATH 3091	Mathematical Statistics I	3
MATH 3130	Theory of Numbers	3
MATH 3250	Calculus III	3
MATH 3350	Linear Algebra	3
MATH 3400	Differential Equations	3
MATH 4151	Numerical Analysis I	3
MATH 4391	Abstract Algebra I	3
MATH 4550	Advanced Calculus	3
MATH 4970	Integration Seminar	1
MATH 4___	(2) Math Courses at the 4000-level	6
COMP 2120	Programming Logic	3
COMP 2315	Structured Programming	3
PHYS 3001	General Physics I	4
PHYS 3002	General Physics II	4

Medical Emergencies (AS)

The Medical Emergencies Science Program offers associate and bachelor's degrees. The degrees in Medical Emergencies aspire to prepare paramedical professionals capable of offering emergency prehospital care in a competent, sensitive, effective, safe and quality way, to clients in situations related to a health threat and that occur by fortuitous cause. The student of the Associate Degree in Sciences in Medical Emergencies will have the option of

continuing studies to complete his bachelor's degree.

The San Germán Campus is authorized to offer this program.

Competency Profile of Graduates

The Associate Degree in Science in Medical Emergencies is designed to develop the competences that allow the student to:

Knowledge

1. Understand the essential elements to provide safe and effective emergency care at different stages of growth and development.

2. Know the basic skills of estimation and intervention aimed at achieving the best results, while offering emergency care in various scenarios.

3. Know the interventions based on research findings for the continuous improvement of the profession.

Abilities

1. Use basic emergency interventions to prevent risks and complications, maintain life and restore health.

2. Perform management skills, coordination and collaboration with the interdisciplinary team for the continuous improvement of care during an emergency in various scenarios.

3. Demonstrate effective communication skills during an emergency.

4. Incorporate the use of technology to offer emergency care in various scenarios.

Attitudes

1. Execute the professional role with responsibility and commitment.

2. Value ethical-legal principles by offering care in response to changing needs in diverse emergency situations.

3. Demonstrate responsibility and commitment to their own development and to the profession.

Admission Requirements

In addition to complying with all the admission regulations established in the General Catalog, the applicant for the degree must:

1. Have a 2.50 admission average from high school or place of origin.

2. The candidate who already has an Associate Degree in Medical Emergencies and wishes to complete a bachelor's degree must have completed the degree with a minimum average of 2.50 in the core and major courses from a known institution.

3. Candidates who come from a certificate program in Medical Emergencies may challenge up to ten credits through the evaluation of their portfolio or challenge exam in the subjects described: MEEM 1111, 1120, 1121, 2141, 2234 and 2351, following the parameters established in the section on validation of learning experiences of the current General Catalog, electronic version.

After being officially admitted to the Program, the student is responsible for complying with all the requirements that the practice agencies require (uniform, driver's license, negative criminal record certification, health certificate, CPR, vaccines and crops, among others).

Academic Progress Requirements

In addition to complying with all the academic progress norms established in the General Catalog, the applicant to the degree must:

1. Pass the GEMA 1200 course, the Core Requirements and the Major Requirements with a minimum grade of C.

Transfer Requirements

In addition to complying with all transfer and transfer regulations established in the General Catalog, the applicant for the degree must:

1. Meet the criteria for admission to the Associate Degree Program or the Bachelor of Science in Medical Emergencies.

2. Be evaluated and approved by the program director or his/her representative to enter the program as a transfer student or to take courses in combined enrollment.

Graduation Requirements

In addition to fulfilling all the graduation requirements established in the General Catalog, all candidates for graduation from the Associate Degree Program and the Bachelor of Science in Medical Emergencies must hold a minimum average of 2.50.

Requirements for the Associate Degree in Science in Medical Emergencies

General Education Requirements	24 credits
Core Requirements	16 credits
Major Requirements	27 credits
Total	67 credits

General Education Requirements - 24 credits

GESP	Spanish - Select 6 credits from the GESP category	6
GEEN	English - Select 6 credits from the GEEN category	6
GEP-GECF 1010	Introduction to the Christian Faith	3
GEP-GEIC 1010	Information and Computing Technologies	3
GEP-GEMA 1200	Fundamentals of Algebra	3
GEP-GEHS 2010	Historical Process of Contemporary Puerto Rico Or	3
GEP-GEEC 2000	Entrepreneurial Culture	3

Core Requirements - 16 credits

BIOL 1003	Basic Biological Concepts	3
BIOL 2151	Human Anatomy and Physiology I	3
BIOL 2152	Human Anatomy and Physiology Ii	3
BIOL 2154	Fundamentals of Microbiology	3
CHEM 2110	General Chemistry for Health Sciences	4

Major Requirements - 27 credits

MEEM 1111	Skills in Sign Language	3
MEEM 1120	Basic Concepts of Medical Emergencies	2
MEEM 1121	Pathophysiology	2
MEEM 1221	Customer's Assessment	3
MEEM 1222	Applied Pharmacology	2
MEEM 2141	Cardiorespiratory Function	2
MEEM 2142	Trauma Handling I	2
MEEM 2233	Trauma Handling II	3
MEEM 2234	Transportation and Communication System	2
MEEM 2351	Rescue Operations	2
MEEM 3110	Integrated Practice	4

Medical Emergencies (BS)

The Medical Emergencies Science Program offers associate and bachelor's degrees. The degrees in Medical Emergencies aspire to prepare paramedical professionals capable of offering emergency prehospital care in a competent, sensitive, effective, safe and quality way, to clients in situations related to a health threat and that occur by fortuitous cause.

The San Germán Campus is authorized to offer this program.

Competencies Profile of Graduates

The Bachelor's Degree in Science in Medical Emergencies is designed to develop the competences that allow the students to:

Knowledge

Demonstrate knowledge and understanding of:

1. the strategies of safe and effective intervention when assisting clients in different stages of growth and development in emergency situations.

2. the intervention strategies of risk prevention and its complications for the maintenance and restoration of health.

3. the use of intervention strategies based on research findings for the continuous improvement of the profession.

Skills

1. Use advanced estimation skills and interventions during an emergency in various scenarios.

2. Carry out advanced emergency interventions to prevent risks and complications, maintain life and restore health.

3. Demonstrate leadership and management skills.

4. Effectively use communication skills to optimize their own functioning as a provider and care coordinator and as a member of the profession.

Attitudes

1. Value humanistic care as a means of protecting, optimizing and preserving human dignity.

2. Execute their professional role guided by ethical and legal principles and the standards of practice.

3. Demonstrate responsibility and commitment to their own development and to the profession.

Admission Requirements

In addition to complying with all the admission regulations established in the General Catalog, the applicant for the degree must:

1. Have a 2.50 admission average from high school or place of origin.

2. The candidate who already has an Associate Degree in Medical Emergencies and wishes to complete a bachelor's degree must have completed the degree with a minimum average of 2.50 in the core and major courses from a known institution.

3. Candidates who come from a certificate program in Medical Emergencies may challenge up to ten credits through the evaluation of their portfolio or challenge exam in the subjects described: MEEM 1111, 1120, 1121, 2141, 2234 and 2351, following the parameters established in the section on validation of learning experiences of the current General Catalog, electronic version.

After being officially admitted to the Program, the student is responsible for complying with all the requirements that the practice agencies require (uniform, driver's license, negative criminal record certification, health certificate, CPR, vaccines and crops, among others).

Academic Progress Requirements

In addition to complying with all the academic progress norms established in the General Catalog, the applicant to the degree must:

1. Pass the GEMA 1200 course, the Core Requirements and the Major Requirements with a minimum grade of C.

Transfer Requirements

In addition to complying with all transfer and transfer regulations established in the General Catalog, the applicant for the degree must:

1. Meet the criteria for admission to the Associate Degree Program or the Bachelor of Science in Medical Emergencies.

2. Be evaluated and approved by the program director or his/her representative to enter the program as a transfer student or to take courses in combined

enrollment.

Graduation Requirements

In addition to fulfilling all the graduation requirements established in the General Catalog, all candidates for graduation from the Associate Degree Program and the Bachelor of Science in Medical Emergencies must hold a minimum average of 2.50.

Requirements for the Bachelor's Degree in Science in Medical Emergencies

General Education Requirements	48 credits
Core Requirements	16 credits
Major Requirements	50 credits
Elective Courses	6 credits
Total	120 credits

General Education Requirements - 48 credits

Forty-eight (48) credits are required as explained in the General Education Requirements for Bachelor's Degrees section. Students will take the GEMA 1200 course in the Basic Mathematics Skills category.

Core Requirements - 16 credits

BIOL 1003	Basic Biological Concepts	3
BIOL 2151	Human Anatomy and Physiology I	3
BIOL 2152	Human Anatomy and Physiology Ii	3
BIOL 2154	Fundamentals of Microbiology	3
CHEM 2110	General Chemistry for Health Sciences	4

Major Requirements - 50 credits

MEEM 1111	Skills in Sign Language	3
MEEM 1120	Basic Concepts of Medical Emergencies	2
MEEM 1121	Pathophysiology	2
MEEM 1221	Customer's Assessment	3
MEEM 1222	Applied Pharmacology	2
MEEM 2141	Cardiorespiratory Function	2
MEEM 2142	Trauma Handling I	2
MEEM 2233	Trauma Handling II	3
MEEM 2234	Transportation and Communication System	2
MEEM 2351	Rescue Operations	2
MEEM 3110	Integrated Practice	4
MEEM 3120	Dimensions of Practice and Professional Ethics	4

MEEM 3130	Research Seminar	3
MEEM 3140	Emergencies I	3
MEEM 4120	Emergencies II	3
MEEM 4180	Special Populations	3
MEEM 4190	Management of Complex Scenarios	3
MEEM 4980	Professional Practice	4

Medical Sonography in Cardiovascular Sonography (BS)

Medical Sonography in Cardiovascular Sonography (BS)

The Bachelor of Science Program in Medical Sonography with a major in Cardiovascular Sonography offers a flexible program for students who have an Associate Degree in a health related profession. The main purpose of the Program is to develop clinical competences in medical sonography, as well as to promote the development of a judicious professional, with knowledge and skills to provide high quality services.

The Program offers students the opportunity to develop professionally through the acquisition of experiences in the instructive and clinical areas. The Program includes a base of scientific knowledge supported by concepts of the natural, social and human sciences.

Since sonography is a health-allied science, it uses the modality of ultrasound to assess the well-being of the patient through the diagnosis, analysis and monitoring of diseases or medical procedures.

It is expected that graduates of this Program will be prepared to work in scenarios such as: public and private hospitals, specialized clinics, medical equipment companies and in industry.

The Ponce Campus is authorized to offer this Program.

Program Goals

The Program of Medical Sonography in Cardiovascular Sonography has these goals:

1. To develop medical sonographers focused on mastering the required competences of the discipline, in the context of scientific, humanistic and technological culture.

2. Contribute to the development of skills in the handling of instrumentation and appropriate tracking methods, so that the good management of the patient

can be ensured while performing diagnostic quality work.

3. To train medical sonographers, capable of integrating the theoretical, technological, and protocol knowledge related to the tracking and identification of normal and variable pathological structures in the clinical scenario and within the framework of ethical, legal and social responsibility that regulates the profession.

Program Objectives

The Bachelor of Science in Medical Sonography in Cardiovascular Sonography has the following objectives:

1. Use physics applications and illustrate how these can help in obtaining quality images that lead to a safer and more accurate diagnosis.

2. Apply technological advances as resources to demonstrate sonographic anatomy and detect pathological processes that can be observed through compliance with laws, regulations, and health related policies.

3. Develop a medical sonographer who is committed to the patient's medical care needs by integrating their ethical, legal, and social knowledge and the problem solving process.

Competencies Profile of Graduate

The Program is designed to develop the competences that allow the student to:

Knowledge

1. Identify solutions from the knowledge of ultrasound physics, medical and cardiovascular sonography.

2. Recognize the aspects associated with the selection of instrumentation, control and adjustment of factors related to the sonographic unit.

3. Examine the execution of the tracking, protocol and instrumentation processes necessary to carry out the different sonographic studies.

Skills

1. Use medical and cardiovascular sonography solutions in the care and management of the patient during the performance of clinical cases.

2. Select the appropriate instrumentation and effectively

handle the ultrasound equipment.

3. Draft the preliminary reports, according to the tracking process and sonographic protocol.

Attitudes

1. Assess the necessary elements for the performance of sonographic and cardiovascular studies, considering the regulatory, technical, protocol and tracking aspects involved in the profession.

2. Assume leadership roles and professional responsibility when conducting sonographic and cardiovascular studies.

3. Promulgate the ethical commitment, preparation and professional development in the field of medical sonography.

Admission Requirements

Candidates seeking to enter the Bachelor of Science Program in Medical Sonography must meet the following requirements:

1. Hold an associate's degree in a health-related profession from an accredited institution that includes a mathematics course and an anatomy and physiology course.

2. Have a minimum average of 2.50 in the degree.

3. Meet the admission norms established in the General Catalog of the University.

4. Be interviewed by the admissions committee and/or the Program coordinator.

5. Meet the admission requirements established by the Department of Health Sciences:

   a. Health Certificate.

   b. Certificate of Immunization against Hepatitis B.

   c. Certificate of no Criminal Record.

   d. Certification of Law 300, as required.

Requirements for the Bachelor of Science Degree in Medical Sonography in Cardiovascular Sonography

Requirements of the Associate Degree in Radiological Technology	60 credits
General Education Requirements	21 credits
Major Requirements	48 credits
Elective Courses	3 credits
Total	132 credits

General Education Requirements - 21 credits

To receive the Bachelor of Science Degree in Medical Sonography, students must approve 21 credits in General Education in additional to the 24 credits approved for the Associate Degree.

Major Requirements - 48 credits

SONO 3000	Basic Principles of Ultrasound	3
SONO 3010	Ultrasound Physics I	3
SONO 3015	Ultrasound Physics II	3
SONO 3021	Abdomen Sonography	3
SONO 3022	Pediatric and Adult Pelvic Sonography	3
SONO 3024	Obstetric Sonography	3
SONO 4000	Special Sonographic Studies	3
SONO 4010	Skeletal Muscle Sonography	3
SONO 4911	Ultrasound Internship I	3
SONO 4912	Ultrasound Internship II	3
SONO 4913	Ultrasound Internship III	3
SONO 4045	Cardiovascular Sonography	3
SONO 4050	Introduction to Echocardiography	3
SONO 4055	Cardiovascular Pathophysiology	3
SONO 4065	General Vascular Sonography	3
SONO 4075	Advanced Vascular Sonography	3

Minor in Skeletal Muscle Sonography

The Ponce Campus is authorized to offer this minor.

Requirements for the Minor in Skeletal Muscle Sonography - 18 credits

Course for the Minor in Skeletal Muscle Sonography

SONO 3005	Anatomy and Pathophysiology MSK	3
SONO 3010	Ultrasound Physics I	3

SONO 3011	Sonography MSK in the Upper Extremities	3
SONO 3012	Sonography MSK in the Lower Extremities	3
CTMR 4010	Computerized Tomography MSK	3
CTMR 4011	Magnetic Resonance MSK	3

Medical Technology (BS and Certificate)

The Medical Technology Program responds to the mission of preparing professionals to fill the needs of present day Puerto Rico.

It aspires to provide an excellent academic education to prepare medical or scientific clinical laboratory technologists with the knowledge, skills, and attitudes necessary in a clinical laboratory science professional beginning in the profession. It also attempts to develop individuals capable of communicating and interacting with patients, their teammates and other health professionals. The application of ethical and moral principles is fomented in the compliance of the laws that govern the laboratory and the Medical Technology profession. Students will become enabled to perform in different scenarios and to practice as enterprising professionals, clinical instructors, consultants, supervisors, administrators, educators, and researchers, among others by means of an innovating curriculum that promotes clinical research.

This Program is accredited by the National Accrediting Agency of Clinical Laboratory Sciences (NAACLS) and it has an intensive one year curriculum divided in two terms: academic or theoretical and practical. Two groups of students are admitted annually, one in August and the other in February. Upon completion of the Program, students are eligible to take the professional certification examination offered by the Puerto Rico Board of Examiners for Medical Technologists and the American Society for Clinical Pathologists (ASCP). The Programs have affiliations established with different clinical laboratories where students may complete their clinical practice. These facilities are certified by agencies recognized by NAACLS, such as the Department of Health, the Clinical Laboratory Improvement Amendments (CLIA), and the Joint Commission of Hospital Accreditation (JCHA).

The Bachelor of Science degree in Medical Technology and the Professional Post Bachelor Certificate are offered.

Competencies Profile of Graduates

The program is designed to permit the development of the following competencies:

Knowledge

1. Demonstrate knowledge and understanding of the principles and methodologies of clinical laboratory services performed for all major areas in the laboratory.

2. Interpret the principles and practices of administration, supervision, quality assessment, instrumentation, education methodologies, safety, regulations and laws corresponding to laboratory sciences.

Skills

1. Evaluate the fundamental concepts of clinical chemistry, hematology and hemostasis, immunology, blood bank, microbiology, urinalysis and body fluids to correlate them with the analysis of laboratory tests and decision making.

2. Provide solutions to problems related to the performance of laboratory tests.

3. Evaluate processes for the accuracy of laboratory results through statistical methods.

4. Design research projects and clinical studies with the purpose of disseminating the results.

Attitudes

1. Apply ethical principles and commit to their professional development.

2. Serve patients, the public, and members of the health team by applying effective communication skills.

Admission Requirements

1. It is required to have the following courses or their equivalent approved.

   • General Biology I, II

   • Microbiology

   • Immunology

   • Anatomy and Physiology

   • General Physics I, II

   • Precalculus

- General Chemistry I, II

- Analytical Chemistry

- Organic Chemistry I, II

- Biochemistry or Cellular and Molecular Biology

In addition, students who opt for the bachelor's degree in Medical Technology must have approved the requirements of general education or its equivalent as established in the academic requirements section of the bachelor's degree in Science in Medical Technology.

2. Completion of an application form and submission of an official academic transcript from all universities attended.

3. Three (3) letters of recommendation from faculty members. The scores obtained will be considered in the admission formula for the selection of the candidate.

4. A minimum general academic grade point index of 2.5 and in biology, chemistry, mathematics and physics courses. The grade point index obtained will be considered in the admission formula for candidate selection.

5. The ability to achieve essential non-academic requirements related to the demands of the profession as published in the information brochure of the Medical Technology Program. Students should have these requirements to be able to complete the Program satisfactorily and to work in the functions of the Medical Technology profession.

6. Take an academic test offered by the school, for the purpose of checking the knowledge and skills related to the academic requirements in part number 1 of the admission requirements. The scores obtained will be considered in the admission formula for the selection of the candidate.

7. After being admitted to the Program, deliver the following documents:

   a. Certificate of Health.

   b. Evidence of vaccination or immunization against Hepatitis B and varicella.

   c. Evidence of a current medical plan.

   d. Negative Certification of Criminal Background validated.

   e. For the clinical practice the doping test is required.

   f. Student Card.

   g. Other documents requested by some practice centers.

It is the responsibility of the student to apply for admission to the School of Medical Technology. Once the application is completed and the admission requirements are met, the students will be selected by a committee composed of two professors and the director of the School of Medical Technology, in a competitive manner, according to the program's capacity.

To enroll in the major courses to complete the Bachelor degree or professional certificate (Post-Bachelor) in Medical Technology requires that the student has been accepted into the School.

External and Internal Transfers

Transfers from other universities or from this University to MEDT courses are not allowed, these must be made by application for a space or admission through the School.

Transfers from Other Universities (External)

Students with 3 years or more of university studies who come from other accredited universities and who apply for admission to the School to finish the bachelor's degree in Medical Technology at this University may submit the following approved courses, approved with a minimum of C, to the admissions committee for consideration to validate the requirements of the General Education Program of the Institution:

	Credits
English	9
Spanish	9
Social Sciences	6
Humanities	6
Religion	3
Mathematics/Computers	9
Total	42

These general education courses in addition to the core requirements and major of the Bachelor of Science in Medical Technology, will be considered for the granting of the Bachelor degree.

Internal Transfers

The transfer process will be carried out only if the student is admitted to the School in accordance with the admission requirements and the available space.

Retention Requirements

All students must comply with the satisfactory academic progress standards established in the General Catalog of the Inter-American University. In addition, you must meet the following requirements established by the School and published in the Student Handbook of the Medical Technology Program.

1. **Academic Progress**

Each course in both the theory and practice curricula should be completed with a minimum average of 75 percent. Students will be kept informed of their academic progress during the courses. If students do not obtain the minimum of 75% in a course, they may be placed on probation. Students that fail in a minimum of six credits will be dismissed from the Program for academic deficiency. Students dismissed for academic deficiency will not be readmitted to the Program.

2. **Attendance**

Attendance to the lectures, laboratories, and clinical practice is compulsory. Unjustified absences, as established for each course, are sufficient reason for the dismissal of a student.

3. **Conduct**

Students must comply at all times with the established norms, policies and procedures of the Program, as established in the Student Handbook of the Medical Technology Program.

No student dismissed from the Program for violation of the Program norms may be readmitted to this Program.

Graduation Requirements

1. Approve each theory and practice course with a minimum execution criterion of 75%.

2. Minimum overall graduation average of 2.50.

Upon successful completion of the Program, the graduate is eligible to take the revalidation exams offered by the Board of Examiners of Medical Technologists of Puerto Rico and the American Society of Clinical Pathologists (ASCP).

After passing the revalidation exam, the student is considered a certified Medical Technologist.

The granting of the academic degree by the Institution does not depend on the graduate passing exams of revalidation.

Medical Technology (Post-Bachelor Professional Certificate)

The Metropolitan and San Germán campuses are authorized to offer the courses for the Professional Certificate in Medical Technology.

Academic Requirements for the Professional Certificate in Medical Technology

A Bachelor's Degree from an Accredited University
Specific Requirements*

Certificate Requirements	46 credits
Total	46 credits

Specific Requirements*

For the Professional Certificate in Medical Technology the following courses are required prior to the certificate course requirements.

- General Biology I and II
- Microbiology
- Immunology
- Anatomy and Physiology
- General Physics I and II
- Precálculus
- General Chemistry I and II
- Analytical Chemistry
- Organic Chemistry I and II
- Biochemistry or Cellular and Molecular Biology

Medical Technology (BS)

Admission to the Bachelor of Science in Medical Technology will be made only if the student is admitted to the Program.

Students of the Bachelor programs in Natural Sciences can apply for admission to the Bachelor of Science in Medical Technology program once they meet the academic

requirements of the Bachelor degree presented along with the other requirements for admission to the School.

The general academic, core and elective courses of the Bachelor must be completed within the first three years of the Bachelor of your selection. If admitted to the Program and satisfactorily complete the major courses, the student will receive a Bachelor of Science degree in Medical Technology.

Students who are not admitted to the Medical Technology program can complete a Bachelor of Science and apply again to the School to compete for the Professional Certificate Program (post-Bachelor) in Medical Technology.

Only students admitted to the Medical Technology program can use the code assigned by the University to identify the academic program (165).

The Metropolitan and San Germán campuses are authorized to offer this Program.

Academic Requirements for the Bachelor of Science Degree in Medical Technology

General Education Requirements or their Equivalent	42 credits
Core Course Requirements*	59-60 credits
Major Requirements	46 credits
Elective Courses	3 credits
Total	150-151 credits

General Education Requirements - 42 credits

Forty-two (42) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees." Students will take the course GEMA 1200 in the Basic Skills in Mathematics category. Students of this Program are exempt from taking the course GEST 2020 or 2030 of the Scientific and Technological Context category, and the course GEHP 3000 of the Health and Quality of Life.

Core Course Requirements - 59 or 60 credits

BIOL 1101	General Biology I	3
BIOL 1102	General Biology II	3
BIOL 1103	Biology Skills Laboratory I	1
BIOL 1104	Biology Skills Laboratory II	1
BIOL 2103	Zoology	3
BIOL 1104	Biology Skills Laboratory II	1
BIOL 3010	Genetics	3

BIOL 3105	General Microbiology	4
BIOL 3106	Human Anatomy and Physiology	4
BIOL 3405	Immunology	3
CHEM 1111	General Chemistry I	4
CHEM 2212	General Chemistry II	4
CHEM 2221	Organic Chemistry I	4
CHEM 2222	Organic Chemistry II	4
CHEM 3320	Analytical Chemistry	4
CHEM 4220	Biochemistry Or	4
BIOL 4604	Cellular and Molecular Biology Or	3
BMSC 4015	Biochemistry of Human Physiology	3
PHYS 3001	General Physics I	4
PHYS 3002	General Physics II	4
MATH 1511	Precalculus I And	3
MATH 1512	Precalculus II Or	3
MATH 1500	Precalculus	5

Note:

1. The following courses are needed in order to take the major courses: BIOL, 1101, 1102, 3105, 3106; CHEM 1111, 2212, 2221, 2222.

2. MATH 1500 Precalculus (5 credits) can be accepted as long as the student has a minimum of 6 credits in additional mathematics to the GEMA 1200.

Major Requirements - 46 credits

MEDT 4501	Laboratory Operations I: Basic Principles, Statistics and Molecular Techniques in the Clinical Laboratory	3
MEDT 4510	Clinical Chemistry, Pathology and Molecular Diagnosis	4
MEDT 4520	Body Fluids	1
MEDT 4531	Clinical Immunology	2
MEDT 4532	Blood Banking	3
MEDT 4540	Hematology, Coagulation and Molecular Diagnosis in Hematopathology	4
MEDT 4560	Mycology and Virology	1
MEDT 4570	Clinical Bacteriology and Molecular Diagnosis of Infectious Diseases	4

MEDT 4585	Clinical Parasitology	2
MEDT 4593	Laboratory Operations II: Laboratory Administration, Ethics and Education	2
MEDT 4595	Advanced Seminar and Clinical Research	1
MEDT 4915	Clinical Practice in Blood Banking	3
MEDT 4916	Clinical Practice in Immunology and Serology	2
MEDT 4921	Practice in Clinical Chemistry	4
MEDT 4922	Clinical Practice in Hematology and Coagulation	4
MEDT 4923	Clinical Practice in Microbiology	4
MEDT 4924	Clinical Practice in Urinalysis And Parasitology	2

Microbiology (BS)

Microbiology (BS)

The Bachelor of Science degree in Microbiology is interdisciplinary. It integrates the areas of natural science and applies them to the understanding of microorganisms and their diverse functions. The characteristics of the different groups of microorganisms, their growth and development, the environmental interactions and their importance are studied. The Program aims to form graduates that are proficient in the use of microbiological techniques and chemical analyses. Emphasis is given to the application of asepsis measures, security in a controlled environment, research design and data analysis.

The Aguadilla, Bayamón, Fajardo, Metropolitan, Ponce, and San Germán campuses are authorized to offer this Program.

Program goals

The goals of the Bachelor of Science in Microbiology are:

1.

Prepare a professional with an interdisciplinary approach in the area of Microbiology.

2.

Train graduates proficient in the application of the scientific method and microbiological techniques.

3.

Promote professional values and attributes so that they can

practice in the area of Microbiology with a high level of ethical conduct.

Program objectives

The Microbiology Science Program has as general objectives:

Knowledge

1.

Demonstrate knowledge in the area of Microbiology with emphasis on biodiversity, morphology, metabolism, genetics, physiology and ecology.

Abilities

1.

Demonstrate mastery of laboratory techniques related to Microbiology.

2.

Develop communication, investigative and scientific analysis skills, inherent to their performance as microbiologists.

Attitudes

1.

Demonstrate ethical and moral conduct in the application of knowledge in Microbiology for the benefit of society.

2.

Assess the interactions between microorganisms and their environment.

Competencies Profile of Graduates

This Program is designed to develop the competencies that will enable students to:

Knowledge

1. Identify the importance, diversity, characteristics and structures of microorganisms.

2. Describe the growth, metabolism, and control of microorganisms.

3. Explain the symbiotic relationships between microorganisms and more complex organisms.

Abilities

1. Apply management techniques to isolate, purify, cultivate, observe, identify, and control microorganisms.

2. Implement the safety measures, laws and regulations necessary for optimal functioning in the work environment.

3. Prepare oral and written presentations, in English and Spanish, related to Microbiology.

Attitudes

1. Demonstrate professional and bioethical values in the use and management of microorganisms in research, industrial processes and with interdisciplinary groups at a professional and/or community level.

2. Appreciate the role of microorganisms as study models, pathogens, and in their function of maintaining balance in the ecosystem.

Requirements for the Bachelor of Science Degree in Microbiology

General Education Requirements	45 credits
Major Requirements	68-69 credits
Prescribed Distributive Requirements	6-9 credits
Elective Courses	3 credits
Total	122-126 credits

General Education Requirements - 45 credits

Forty-five (45) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees)." Students of this Program will take GEMA 1200 in the Basic Skills in Mathematics category. Students of this Program are exempt from the Scientific and Technological Context category.

Major Requirements - 68-69 credits

MICR 3211	Microbial Physiology	3
MICR 4010	Microbial Ecology	3
MICR 4505	Microbiological Applications Techniques	2
MICR 4955	Integration Seminar in Microbiology	1
BIOL 1101	General Biology I	3
BIOL 1102	General Biology II	3
BIOL 1103	Biology Skills Laboratory I	1
BIOL 1104	Biology Skills Laboratory II	1
BIOL 3010	Genetics	3
BIOL 3105	General Microbiology	4
BIOL 3405	Immunology	3
BIOL 4303	Mycology	3
BIOL 4305	Medical Microbiology	3
BIOL 4433	Industrial Microbiology	3
CHEM 1111	General Chemistry I	4
CHEM 2212	General Chemistry II	4
CHEM 2221	Organic Chemistry I	4
CHEM 2222	Organic Chemistry II	4
CHEM 4220	Biochemistry Or	4
BIOL 4604	Cellular and Molecular Biology	3
MATH 1500	Precalculus	5
PHYS 3001	General Physics I	4
PHYS 3002	General Physics II	4

Note: Students who take course CHEM 4220 as a required major course will take course CHEM 3320 as a prescribed distributive course.

Prescribed Distributive Requirements - 6 credits

The student will select two courses between six (6) to nine (9) credits among the following courses:

BIOL 2153	Biostatistics	3
BIOL 3106	Human Anatomy and Physiology	4
BIOL 3213	Parasitology	3
BIOL 3309	Food Microbiology	3
BIOL 4306	Virology	3
CHEM 3320	Analytical Chemistry	4
MATH 2251	Calculus I	5
MICR 4910	Practice	2

Minor in Microbiology

The Aguadilla, Barranquitas, Bayamón, Fajardo, Metropolitan, Ponce and San Germán campuses are authorized to offer this minor.

Requirements for the Minor in Microbiology - 20 credits

Courses for the Minor in Microbiology

MICR 3211	Microbial Physiology	3
MICR 4010	Microbial Ecology	3
MICR 4505	Microbiological Applications Techniques	2
BIOL 4303	Mycology	3
BIOL 4305	Medical Microbiology	3
BIOL 4433	Industrial Microbiology	3

Select a course from the following (3 credits):

BIOL 3405	Immunology	3

BIOL 3213	Parasitology	3
BIOL 3309	Food Microbiology	3
BIOL 4306	Virology	3

Modern Language (BA)

The Bachelor of Arts in Modern Languages has as its main purpose to train students with the skills necessary to perform successfully in international communication.

The Metropolitan Campus is authorized to offer this program.

Program Goal

Train students so that they can apply language skills and knowledge when working as translators, educators, interpreters or professionals in international companies or institutions.

Program Objectives

1. Train professionals trained to maintain effective communication in two modern languages. Promote events and international relations between foreign institutions and companies.

2. Promote knowledge highlighting sensitivity and respect for learning modern languages with an interdisciplinary approach to different cultures.

3. Encourage ethical behavior in professional practice and with knowledge of the discipline from a comprehensive vision of the discipline.

Competencies Profile of Graduate's competencies

The Bachelor of Arts in Modern Languages is designed to develop the competencies that allow the student to:

Knowledge

1. Know the history and culture of the countries of the languages studied.

2. Identify the main literary currents and the linguistic aspects of the languages studied.

Skills

1. Express oneself in modern languages orally and in writing fluently, properly and correctly, in both formal and informal situations.

2. Produce different texts written in two modern languages.

Attitudes

1. Show appreciation and respect for other cultures.

1. Show appreciation for diversity and intercultural dialogue.

Requirements for the BA in Modern Languages

General Education Requirements	48 credits
Major Requirements	54 credits
Related Requirements	3 credits
Elective Courses	15 credits
Total	120 credits

General Education Requirements - 48 credits

Forty and eight (48) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees".

Major Requirements - 54 credits

The student must select two different languages (**Italian, German, French, Portuguese**) from the following options and complete the list of courses on each language:

ITAL 1011	Italian I	3
ITAL 1012	Italian II	3
ITAL 2021	Italian III	3
ITAL 2022	Italian IV	3
ITAL 3010	Diction and Phonetics	3
ITAL 3020	Advanced Writing	3
ITAL 3021	Italian Literature I	3
ITAL 3022	Italian Literature II	3
ITAL 4010	Italian Culture and History	3
GERM 1011	German I	3
GERM 1012	German II	3
GERM 2021	German III	3
GERM 2022	German IV	3
GERM 3010	Diction and Phonetics	3
GERM 3020	Advanced Writing	3
GERM 3201	German Literature I	3
GERM 3022	German Literature II	3
GERM 4010	German Culture and History	3
FREN 1011	French I	3
FREN 1012	French II	3

FREN 2021	French III	3
FREN 2022	French IV	3
FREN 3010	Diction and Phonetics	3
FREN 3020	Advanced Writing	3
FREN 3021	French Literature I	3
FREN 3022	French Literature II	3
FREN 4010	French Culture and History	3
PORT 1011	Portuguese I	3
PORT 1012	Portuguese II	3
PORT 2021	Portuguese III	3
PORT 2022	Portuguese IV	3
PORT 3010	Diction and Phonetics	3
PORT 3020	Advanced Writing	3
PORT 3021	Portuguese Literature	3
PORT 3022	Portuguese Literature	3
PORT 4010	Portuguese Culture and History	3

Related Requirements - 3 credits

HUMA 4010	European Cinema	3

Elective Courses - 15 credits

Multidisciplinary Studies (AA)

The Associate of Arts in Multidisciplinary Studies is intended to provide students with an integral formation through the development of knowledge, skills, and attitudes that strengthen their professional training through multidisciplinary studies. The degree prepares professionals who address the different problems and situations that affect society from a humanistic frame of reference.

The program integrates different areas of knowledge that include mastery of basic skills, disciplines of the humanities, language arts, and the social sciences. In addition, it provides students with the possibility of pursuing studies leading to a Bachelor's degree in Multidisciplinary Studies or in other fields of knowledge.

The Arecibo Campus is authorized to offer this Program.

Competencies Profile of Graduates

The program is designed to develop the competencies that allow a student to:

Knowledge

Demonstrate knowledge and understanding of:

1. the fundamental aspects related to history, the contributions of religions to civilization, the

development of philosophical thought, and the cultivation of an artistic sensibility.

2. human relations from a psychosocial, global and multicultural perspective.

Skills

1. Develop verbal and written communication skills in Spanish and English.

2. Use the skills of logical thinking, argumentation and rhetoric that apply to all bodies of knowledge.

3. Practice self-directed learning and intellectual independence.

Attitudes

Demonstrate:

1. responsibility as an entity of a changing, global and pluralistic society.

2. responsibility and ethical and humanistic commitment in response to the changing needs of society.

3. appreciation for the development of a culture of peace, respect for gender differences and human dignity.

Requirements of the Associate Degree in Multidisciplinary Studies

General Education Requirements	24 credits
Major Requirements	35 credits
Total	59 credits

General Education Requirements - 24 credits

GESP	Spanish - Select 6 credits from the GESP category	6
GEEN	English - Select 6 credits from the GEEN category	6
GEP-GEMA 1000	Quantitative Reasoning	3
GEP-GECF 1010	Introduction to the Christian Faith	3
GEP-GEIC 1010	Information and Computing Technologies	3
GEP-GEHS 2010	Historical Process of Contemporary Puerto Rico Or	3
GEP-GEEC	Entrepreneurial Culture	3

2000

Major Requirements - 35 credits

GEP-GESP 2203	Literature and World View	3
ARTS 1102	Technical Foundations and Drawing Practice	4
THEA 1500	Acting	3
ENGL 2076	Reading and Writing of Technical Texts	3
HIST 2220	Puerto Rico and the Insular Caribbean in the 20th Century	3
HIST 2035	Latin America Since its Independence	3
MUSI 1111	Rudiments and Auditory Training I	2
MUSI 1112	Rudiments and Auditory Training II	2
PHIL 2013	Types and Problems in Philosophy	3
PHIL 2354	Modern Logic	3
RELI 2013	Compared Religions	3
SPAN 3020	Writing Workshop	3

Multidisciplinary Studies (BA)

Multidisciplinary Studies (BA)

The Bachelor of Arts degree in Multidisciplinary Studies is a program characterized for its nontraditional approach. It aims to prepare students to enter the world of work, continue graduate studies, and it develops an excellent professional as a world citizen.

The curriculum of this program has courses of the major that include branches of knowledge related to the humanities and social sciences, and courses in English and Spanish communication skills. This preparation serves as a solid foundation for the formation of students with knowledge, skills and aptitudes of a humanist nature necessary for the development of a better society.

The program provides the flexibility with which students develop their major in multidisciplinary studies by taking elective courses in different departments, University campuses, and in other institutions of the country or through international exchange programs. It permits students to acquire a personal, as well as a professional preparation in harmony with their interests and aptitudes and which, at the same time, responds to the needs of the local and world society.

The Aguadilla, Arecibo and Barranquitas campuses are

authorized to offer this Program.

Specific Admission Requirements for Internal and External Transfer Students

The students of other programs of Inter American University of Puerto Rico, of other accredited universities or schools may enter the Bachelor's Program in Multidisciplinary Studies offered by the Humanistic Studies Department if they fulfill the admission requirements of Inter American University of Puerto Rico.

Graduation Requirements

In addition to taking all the required courses, students must have approved the major courses with a minimum grade of C.

Requirements for the Bachelor of Arts Degree in Multidisciplinary Studies

General Education Requirements	54 credits
Major Requirements	44 credits
Elective Courses	24 credits
Total	122 credits

General Education Requirements - 54 credits

Fifty-four (54) General Education credits are required for this Program. The students will take GEEC 2000 in the Entrepreneurial Culture category. In addition to GEHS 2010, students will take: GEHS 3020, 4020 and 4030 in the Historical and Social Context category; only the course GEPE 4040 in the Philosophical and Aesthetic Thought category; and GEST 3020 and 3030 in the Scientific and Technological context category.

Major Requirements - 44 credits

ARTS 1102	Technical Foundations and Drawing Practice	4
THEA 1500	Acting	3
CJUS 2070	Human and Civil Rights	3
ENGL 2060	Conversation and Grammar Review	3
ENGL 3025	Writing of Professional Documents	3
MUSI 1111	Rudiments and Auditory Training I	2
MUSI 1112	Rudiments and Auditory Training II	2
PHIL 2354	Modern Logic	3
PHIL 3013	History of Western Philosophy: Ancient and Medieval	3

POLS 1011	Introduction to Political Science	3
POLS 4033	Inter-American Relations	3
PSYC 1051	General Psychology I	3
SOCI 3753	Social Problems of Puerto Rico	3
SPAN 3020	Writing Workshop	3
SPAN 4010	Reading Workshop	3

Minor in Multidisciplinary Studies

Requirements for the Minor in Multidisciplinary Studies - 18 credits

Courses for the Minor in Multidisciplinary Studies

Students must select 18 credits from the following courses:

ARTS 1102	Technical Foundations and Drawing Practice	4
ENGL 2060	Conversation and Grammar Review	3
ENGL 3025	Writing of Professional Documents	3
PHIL 3013	History of Western Philosophy: Ancient and Medieval	3
POLS 1011	Introduction to Political Science	3
SOCI 3753	Social Problems of Puerto Rico	3
SPAN 3020	Writing Workshop	3
SPAN 4010	Reading Workshop	3

Music (BA and BM)

The Music Program offers four programs leading to a Bachelor's Degree in Music and also offers a minor in music. The Bachelor's Degrees in Music are Applied Music and Music Education: General Vocal and Instrumental. A Bachelor of Arts Degree in music is also offered.

The Degree of Bachelor of Applied Music prepares the students interested in a career as performers for graduate or professional studies abroad. The Bachelor of Music Degree in Music Education meets the curricular content requirements of the Department of Education of Puerto Rico for the certification of teachers of General Vocal and Instrumental Music.

As a means of broadening their employment opportunities in music-related occupations, the Bachelor of Arts Degree gives students the opportunity to receive a degree in music while they explore and study courses in other disciplines.

All students admitted to the Music Department at the San Germán Campus must take a placement test on the rudiments of music and on their instrument, since all students must have chosen an instrument or voice which they will pursue in order to meet the requirements of applied music. In the case of students with little knowledge of the fundamentals of music and in the instrument of their choice, there are preparatory courses that will enable them to satisfy the demands of the required courses.

All students in the Bachelor of Music Degree in Music Education: General-Vocal must comply with the admission requirements, the Satisfactory Academic Progress Norms, the graduation requirements established by the Teacher Education Program (TEP) and with the Music Practice Teaching requirements. Students in this major will take MUED 1091 instead of EDUC 1080, MUED 2080 for EDUC 2890, MUED 3080 for EDUC 3015 and MUED 4915 or 4916 for EDUC 4015.

Requirements for Admission to Practice Teaching courses:

1. Be interviewed by the Teaching Internship Coordinator four weeks before the end of the regular semester prior to the semester in which students wish to do their practice teaching.

2. Submit an application for Admission to Teaching Internship accompanied by a transcript of credits or an evaluation for graduation.

3. Present an autobiography with a narrative of musical experience.

4. Have a minimum general grade point index of 2.50 as well as in major courses.

5. Have passed all courses required for the corresponding Teaching Internship, according to the General Catalog in effect.

Music (BA)

The Bachelor of Arts Degree in Music is designed for students who wish to develop a career in music while exploring and studying courses in other disciplines.

With an activity of intense artistic creativity shared with the of Visual Arts faculty, the opportunity to grow in areas other than performance as a musician or educator is facilitated. The program promotes the participation in ensembles and individual classes that allow the development of performance skills in a broad variety of musical styles.

Students will take private classes in their main instrument, in piano, and in another secondary instrument. They will also appear as soloist in recitals, will participate in chamber ensembles, and in larger ensembles, be they choral or instrumental.

Students entering the program will take a placement test in rudiments of music and in their instrument. This test must be approved more with a minimum of 70 percent; otherwise students must take preparatory courses. Preparatory courses exist for those students who need them.

The San Germán Campus is authorized to offer this Program.

Competencies Profile of Graduates

The programs are designed to develop the competencies that will enable students to:

Knowledge

Demonstrate knowledge of and understand:

1. The theoretical foundations and appropriate auditory skills to harmonize music on the keyboard or on the guitar.

2. The elements of music as they have evolved through different historical and cultural periods: tempo, melody, harmony, tone, texture and form.

3. The diverse techniques of musical arrangements.

4. The process of musical composition.

Skills

1. Develop their musical quality and the technical skills necessary to obtain an expressive musical execution, by presenting repertoire of varied styles as a soloist, and in sets.

2. Improvise harmonies on the piano or guitar, with transpositions when necessary.

3. Develop skills and apply necessary techniques in direction, to take a score and to prepare it for a practice, by located indicators that will allow it to give form to an appropriate interpretation.

4. Use their auditory skills to detect and correct melodic, rhythmical errors or interpretation errors in a practice.

5. Interpret music at first sight with the necessary exactitude to:

   a. contribute successfully to the development of the sets in which they participate.

   b. use this knowledge as a learning tool.

   c. select and prepare a repertoire for a practice.

6. Demonstrate capacity to use their conducting technique as a means to communicate an interpretation that is musical and aesthetically convincing.

7. Develop skills to take rhythmical, melodic and harmonic dictation.

8. Develop skills in applications of technology to: prepare simple Web pages, improvise on MIDI keyboards, compose using sequencers, record and edit sequences in MIDI format, record and edit audio, write and edit musical annotation in a computer.

Attitudes

1. Demonstrate discipline and commitment towards the practice of their instrument by participating effectively as a soloist in recitals, and in sets of several sizes.

2. Form a good documented judgment on the capacity that the historical and cultural context has to influence the musical production of a country.

3. Value Puerto Rican and Latin American music in the planning of their concerts, by demonstrating knowledge of its history and musical genres.

4. Value technology as a process, a tool capable of extending their musical and creative capacities.

Requirements for the Bachelor of Arts Degree in Music

General Education Requirements	48 credits
Major Requirements	32 credits
Prescribed Distributive Requirements	18 credits
Elective Courses	22 credits
Total	120 credits

General Education Requirements - 48 credits

Forty-eight (48) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees."

Major Requirements - 32 credits

MUSI 1231	Concert Band I	1
MUSI 1232	Concert Band II	1
MUSI 2231	Concert Band III	1
MUSI 2232	Concert Band IV	1
MUSI 3231	Concert Band V	1

Or

MUSI 1241	University Choir I	1
MUSI 1242	University Choir II	1
MUSI 2241	University Choir III	1
MUSI 2242	University Choir IV	1
MUSI 3241	University Choir V	1

Or

MUSI 1251	University Orchestra I	1
MUSI 1252	University Orchestra II	1
MUSI 2251	University Orchestra III	1
MUSI 2252	University Orchestra IV	1
MUSI 3251	University Orchestra V	1

MUSI 1701-1892	Instrument I, II	1-2 per course
MUSI 2701-2892	Instrument III, IV	1-2 per course

MUSI 1401	Theory and Sight-Reading	2
MUSI 1461	Piano: Group Class I	1
MUSI 1462	Piano: Group Class II	1
MUSI 2411	Harmony and Counterpoint I	3
MUSI 2412	Harmony and Counterpoint II	3
MUSI 2470	Keyboard Harmony	2
MUSI 3311	Western Music: History and Literature I	3
MUSI 3312	Western Music: History and Literature II	3
MUSI 3320	History of Puerto Rican And Latin American Music	2
MUSI 4500	Conducting I	3

Note:

Courses MUSI 1251-3251 is for students of violin, viola, cello and contrabass.

Course 1401 requires courses MUSI 1111 and 1112 or passing a placement test.

Prescribed Distributive Requirements - 18 credits

Eighteen (18) additional credits, which may be chosen from other music courses, except MUSI 101, 102, 1110, 1111 and 1112.

Music (BM)

Applied Music (BM)

The Bachelor of Music Degree in Applied Music is designed for students who want a career as performers.

The study program foments experiences of intense artistic creativity under the personal attention of a specialized faculty, successful in facilitating the access to professional connections that may define the career of the future performer. In addition, the participation in ensembles and individual classes that allow the development of performance skills in a broad variety of musical styles is promoted.

A musical formation is obtained by means of the constant study of the process of the creation of music, its history, literature, analysis techniques, conducting and performance. Under the supervision of a faculty member of applied music, who will also be their academic adviser, students will have the opportunity to take individualized classes in their main instrument, in piano, and in another secondary instrument. Students will appear as soloists in recitals, will participate in chamber ensembles, and in larger ensembles, be they choral or instrumental.

Students entering the program will take a placement test in rudiments of music and in their instrument. This test must be approved more with a minimum of 70 percent; otherwise students must take preparatory courses. Preparatory courses exist for those students who need them.

The San Germán Campus is authorized to offer this Program.

Competencies Profile of Graduates

The programs are designed to develop the competencies that will enable students to:

Knowledge

Demonstrate knowledge of and understand:

1. The theoretical foundations and appropriate auditory skills to harmonize music on the keyboard or on the guitar.

2. The elements of music as they have evolved through different historical and cultural periods: tempo,

melody, harmony, tone, texture and form.

3. The diverse techniques of musical arrangements.

4. The process of musical composition solving arguments on the esthetic properties and style of an ample selection of representative literature of the main eras and genres.

Skills

1. Develop their musical quality and the technical skills necessary to obtain an expressive musical execution, by presenting repertoire of varied styles as a soloist, and in sets.

2. Improvise harmonies on the piano or guitar, with transpositions when necessary.

3. Develop skills and apply necessary techniques in conducting, to take a score and to prepare it for a practice, by located indicators that will allow it to give form to an appropriate interpretation.

4. Demonstrate the use of advanced auditory skills that will allow them to read and sing the parts of a musical score for instrumental or vocal groups, for analysis, preparation for a practice or conducting.

5. Interpret music at first sight with the necessary exactitude to:

   a. contribute successfully to the development of the sets in which they participate.

   b. use this knowledge as a learning tool.

   c. select and prepare a repertoire for a practice.

6. Demonstrate capacity to use their conducting technique as a means to communicate an interpretation that is musical and aesthetically convincing.

7. Develop skills to take rhythmical, melodic and harmonic dictation.

8. Develop skills in applications of technology to: prepare simple Web pages, improvise on MIDI keyboards, compose using sequencers, record and edit sequences in MIDI format, record and edit audio, write and edit musical annotation in a computer.

Attitudes

1. Demonstrate discipline and commitment towards the practice of their instrument by participating

effectively as a soloist in recitals, and in sets of several sizes.

2. Voluntarily attend recitals, concerts, classes, theatrical works and other productions.

3. Form a good documented judgment on the capacity that the historical and cultural context has to influence the musical production of a country.

4. Value Puerto Rican and Latin American music in the planning of their concerts, by demonstrating knowledge of its history and musical genres.

5. Value technology as a process, a tool capable of extending their musical and creative capacities.

Requirements for the Bachelor of Music Degree in Applied Music

General Education Requirements	48 credits
Major Requirements	62 credits
Prescribed Distributive Requirements	6 credits
Elective Courses	6 credits
Total	122 credits

General Education Requirements - 48 credits

Forty-eight (48) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees."

Major Requirements - 62 credits

MUSI 2091	Chamber Ensemble I	1
MUSI 2092	Chamber Ensemble II	1
MUSI 2093	Chamber Ensemble III	1
MUSI 2094	Chamber Ensemble IV	1
MUSI 1231	Concert Band I	1
MUSI 1232	Concert Band II	1
MUSI 2231	Concert Band III	1
MUSI 2232	Concert Band IV	1
MUSI 3231	Concert Band V	1
MUSI 3232	Concert Band VI	1
MUSI 4231	Concert Band VII	1
	Or	
MUSI 1241	University Choir I	1
MUSI 1242	University Choir II	1
MUSI 2241	University Choir III	1
MUSI 2242	University Choir IV	1
MUSI 3241	University Choir V	1
MUSI 3242	University Choir VI	1
MUSI 4241	University Choir VII	1

	Or				Music II	
MUSI 1251	University Orchestra I	1		MUSI 1160	Vocal Coaching I	1
MUSI 1252	University Orchestra II	1		MUSI 1161	Vocal Coaching II	1
MUSI 2251	University Orchestra III	1		MUSI 1162	Vocal Coaching III	1
MUSI 2252	University Orchestra IV	1		MUSI 1163	Vocal Coaching IV	1
MUSI 3251	University Orchestra V	1		MUSI 1164	Vocal Coaching V	1
MUSI 3252	University Orchestra VI	1		MUSI 1165	Vocal Coaching VI	1
MUSI 4251	University Orchestra VII	1		MUSI 1166	Vocal Coaching VII	1
				MUSI 1167	Vocal Coaching VIII	1
MUSI 1701-1892	Instrument I, II	1-2 per course		MUSI 1168	Vocal Coaching IX	1
				MUSI 1169	Vocal Coaching X	1
MUSI 2701-2892	Instrument III, IV	1-2 per course		MUSI 1701	Flute	1 or 2
				MUSI 1702	Flute	1 or 2
MUSI 3701-3892	Instrument V, VI	1-2 per course		MUSI 1711	Oboe	1 or 2
				MUSI 1712	Oboe	1 or 2
MUSI 4701-4892	Instrument VII, VIII	1-2 per course		MUSI 1721	Clarinet	1 or 2
				MUSI 1722	Clarinet	1 or 2
				MUSI 1731	Bassoon	1 or 2
MUSI 1401	Theory and Sight-Reading	2		MUSI 1732	Bassoon	1 or 2
MUSI 1461	Piano: Group Class I	1		MUSI 1741	Saxophone	1 or 2
MUSI 1462	Piano: Group Class II	1		MUSI 1742	Saxophone	1 or 2
MUSI 2411	Harmony and Counterpoint I	3		MUSI 1751	Trumpet	1 or 2
MUSI 2412	Harmony and Counterpoint II	3		MUSI 1752	Trumpet	1 or 2
				MUSI 1761	Horn	1 or 2
MUSI 2470	Keyboard Harmony	2		MUSI 1762	Horn	1 or 2
MUSI 3311	Western Music: History and Literature I	3		MUSI 1771	Trombone	1 or 2
				MUSI 1772	Trombone	1 or 2
MUSI 3312	Western Music: History and Literature II	3		MUSI 1781	Euphonium	1 or 2
				MUSI 1782	Euphonium	1 or 2
MUSI 3320	History of Puerto Rican And Latin American Music	2		MUSI 1791	Tuba	1 or 2
				MUSI 1792	Tuba	1 or 2
MUSI 3440	Form and Analysis	3		MUSI 1801	Percussion	1 or 2
MUSI 4431	Orchestration and Arranging I	2		MUSI 1802	Percussion	1 or 2
				MUSI 1811	Piano	1 or 2
MUSI 4432	Orchestration and Arranging II	2		MUSI 1812	Piano	1 or 2
				MUSI 1821	Organ	1 or 2
MUSI 4500	Conducting I	3		MUSI 1822	Organ	1 or 2
MUSI 4900	Recital	2		MUSI 1841	Voice	1 or 2
MUED 4436	Technology in Music Education	3		MUSI 1842	Voice	1 or 2
				MUSI 1851	Violin	1 or 2
				MUSI 1852	Violin	1 or 2
				MUSI 1861	Viola	1-2
				MUSI 1862	Viola	1-2
				MUSI 1871	Cello	1 or 2
				MUSI 1872	Cello	1 or 2
				MUSI 1881	Contrabass	1 or 2
				MUSI 1882	Contrabass	1 or 2
				MUSI 1891	Classical Guitar	1 or 2
				MUSI 1892	Classical Guitar	1 or 2
				MUSI 2095	Chamber Ensemble V	1
				MUSI 2096	Chamber Ensemble VI	1
				MUSI 2097	Chamber Ensemble VII	1
				MUSI 2098	Chamber Ensemble VIII	1

Note:

Students of violin, viola, cello and contrabass must take courses MUSI 1251-4251.

Course MUSI 1401 requires courses MUSI 1111 and 1112 or passing a placement test.

Prescribed Distributive Requirements - 6 credits

Six (6) credits chosen from the following courses:

MUSI 101_	Fundamentals of Applied Music I	1
MUSI 102_	Fundamentals of Applied	1

MUSI 3975	Special Topics	1 to 6
MUSI 4451	Composition I	3
MUSI 4452	Composition II	3
MUSI 2701	Flute	1 or 2
MUSI 2702	Flute	1 or 2
MUSI 2711	Oboe	1 or 2
MUSI 2712	Oboe	1 or 2
MUSI 2721	Clarinet	1 or 2
MUSI 2722	Clarinet	1 or 2
MUSI 2731	Bassoon	1 or 2
MUSI 2732	Bassoon	1 or 2
MUSI 2741	Saxophone	1 or 2
MUSI 2742	Saxophone	1 or 2
MUSI 2751	Trumpet	1 or 2
MUSI 2752	Trumpet	1 or 2
MUSI 2761	Horn	1 or 2
MUSI 2762	Horn	1 or 2
MUSI 2771	Trombone	1 or 2
MUSI 2772	Trombone	1 or 2
MUSI 2781	Euphonium	1 or 2
MUSI 2782	Euphonium	1 or 2
MUSI 2791	Tuba	1 or 2
MUSI 2792	Tuba	1 or 2
MUSI 2801	Percussion	1 or 2
MUSI 2802	Percussion	1 or 2
MUSI 2811	Piano	1 or 2
MUSI 2812	Piano	1 or 2
MUSI 2821	Organ	1 or 2
MUSI 2822	Organ	1 or 2
MUSI 2841	Voice	1 or 2
MUSI 2842	Voice	1 or 2
MUSI 2851	Violin	1 or 2
MUSI 2852	Violin	1 or 2
MUSI 2861	Viola	1 or 2
MUSI 2862	Viola	1 or 2
MUSI 2871	Cello	1 or 2
MUSI 2872	Cello	1 or 2
MUSI 2881	Contrabass	1 or 2
MUSI 2882	Contrabass	1 or 2
MUSI 2891	Classical Guitar	1 or 2
MUSI 2892	Classical Guitar	1 or 2
MUSI 4510	Conducting II: Choral	2
	Or	
MUSI 4520	Conducting II: Instrumental	2
MUSI 2011	Chamber Ensemble and Vocal Instruction I	2
MUSI 2012	Chamber Ensemble and Vocal Instruction II	2
MUSI 2013	Chamber Ensemble and Vocal Instruction III	2
MUSI 2014	Chamber Ensemble and Vocal	2

	Instruction IV	
MUSI 3130	Popular Music Workshop I	1
MUSI 3131	Popular Music Workshop II	1
MUSI 3132	Popular Music Workshop III	1
MUSI 3133	Popular Music Workshop IV	1
MUSI 4600	Foundations of Audio-Recording	3
MUSI 4901	Recital II	2

Note:

A maximum of 6 credits Courses in French, Italian, German and Portuguese.

For courses 1701-1892 and 2701-2892, it must be an instrument other than student's principal instrument.

Music Education: General Vocal (BM)

The Bachelor of Music Degree in Music Education: General-Vocal offers the curricular content required by the Department of Education of Puerto Rico for Teacher Certification in Fine Arts with a specialization in Music Education: General-Vocal, applicable to the elementary and secondary (K-12) levels. Graduates from the program also qualify as teacher in the Specialized Schools of Music. The program is designed for future teachers of voice, piano, guitar, and choir directors.

The study program has been conceptualized under the firm conviction that the perception, understanding and sensitivity towards the art of music are fundamental in the formation of teachers committed to the evolution of music and its teaching. This formation is promoted by means of the study of the processes in the creation of music, including its history, literature, analysis techniques, its conducting and performance.

Participation in the creation of music of a high artistic value is an integral part of the study program. Students will have the opportunity to take individualized classes in their main instrument, also in piano, guitar and in a secondary instrument. They will also participate in chamber ensembles, and in one of the Department's choral ensembles.

The musical knowledge and skills are integrated with theory and practice in the music education courses, and in the education courses. The education courses deal with topics such as: techniques for choral or instrumental teaching, teaching methodologies, technology and teaching experiences.

Students entering the program will take a placement test in rudiments of music and in their instrument. This test must be approved more with a minimum of 70 percent;

otherwise students must take preparatory courses. Preparatory courses exist for those students who need them.

All students in the Bachelor of Music Degree in Music Education: General-Vocal must comply with the admission requirements, the Satisfactory Academic Progress Norms, the graduation requirements established by the Teacher Education Program (TEP) and with the Music Practice Teaching requirements. Students in this major will take MUED 1091 instead of EDUC 1080, MUED 2080 for EDUC 2890, MUED 3080 for EDUC 3015 and MUED 4915 or 4916 for EDUC 4015.

The San Germán Campus is authorized to offer this Program.

Competencies Profile of Graduates

The Bachelor of Music in is designed to develop the competencies that will enable students to:

Knowledge

Demonstrate knowledge and understand:

1. The materials, methodologies, curricular development and technologies to design significant educational experiences.

2. The diverse techniques of musical arrangement.

3. The processes to adapt music by using arrangement techniques for a variety of instrumental and vocal sets.

4. The theoretical foundations and the appropriate auditory skills to harmonize music on the keyboard or the guitar.

5. The main historical periods in the analysis, preparation of scores for practice and performance of representative repertoire of different styles, forms and cultures.

6. The elements of music as they have evolved through different historical and cultural periods: tempo, melody, harmony, tone, texture and form.

7. The process of musical composition, solving arguments on the esthetic properties and style of an ample selection of representative literature of the main eras, genres and composers.

8. The music education curriculum for the elementary and secondary levels and their historical,

philosophical, esthetic, methodological, psychological and educational foundations.

9. The particular mechanisms of evaluation and assessment for the teaching of music, appropriate for the elementary and secondary levels.

Skills

1. Interpret music at first sight with the exactitude necessary to contribute successfully to the development of the sets in which they participate and to use that knowledge as an indispensable tool when giving class and when selecting repertoire of different levels of difficulty.

2. Develop their musical quality and the technical skills necessary to obtain an expressive musical performance, when presenting a repertoire of varied styles as a soloist, in sets and as a teacher in the classroom.

3. Demonstrate the capacity to use their conducting technique as a means to effectively communicate an interpretation that is musical and aesthetically convincing.

4. Fortify their skills on the piano keyboard and on the guitar, so that they can use both instruments as additional learning tools for themselves and in the design of experiences for their students in the classroom.

5. Develop skills to take rhythmical, melodic and harmonic dictation.

6. Demonstrate the use of advanced auditory skills that will allow them to read and sing the parts of a musical score for instrumental or vocal groups for analysis, preparation for practice or conducting.

7. Use their auditory skills to detect and to correct melodic and rhythmical errors, or those of interpretation in practices and in a classroom.

8. Organize successful practices for instrumental and vocal sets.

9. Develop skills and the necessary technical knowledge in conducting, to take a score and to prepare it for practice, locating indicators that will allow for giving form to an appropriate interpretation.

10. Perform an ample selection of repertoire.

11. Use technology to strengthen the pedagogical and

professional work.

Attitudes

1. Form a good documented judgment on the capacity that the historical and cultural context has to influence the musical production of a country.

2. Value Puerto Rican and Latin American music, its history and its musical genres, in the planning of a curriculum that includes a variety of musical experiences, such as playing, creating, listening, improvising, arranging and appreciating, among others.

3. Show commitment with the scope of music education.

4. Regard technology as a process, a tool able to extend their musical and creative capacities.

Requirements for the Bachelor of Music Degree in Music Education: General Vocal

General Education Requirements	48 credits
Core Course Requirements	31 credits
Major Requirements	65 credits
Prescribed Distributive Requirements	6 credits
Elective Courses	3 credits
Total	153 credits

General Education Requirements - 48 credits

Forty-eight (48) credits of General Education are required for this Program. In addition to GEHS 2010, students will take GEHS 4020 or 4030 in the Historical and Social Context category. Students will take courses GEPE 4040 and GEPE 3010 or 3020 to fulfill the six credits required in the Philosophical and Esthetic Thought category.

Core Course Requirements - 31 credits

MUSI 1401	Theory and Sight-Reading	2
MUSI 1461	Piano: Group Class I	1
MUSI 1462	Piano: Group Class II	1
MUSI 2411	Harmony and Counterpoint I	3
MUSI 2412	Harmony and Counterpoint II	3
MUSI 2470	Keyboard Harmony	2
MUSI 3311	Western Music: History and Literature I	3
MUSI 3312	Western Music: History and Literature II	3
MUSI 3320	History of Puerto Rican And Latin American Music	2

MUSI 3440	Form and Analysis	3
MUSI 4431	Orchestration and Arranging I	2
MUSI 4500	Conducting I	3
MUED 4436	Technology in Music Education	3

Note: Course MUSI 1401 requires courses MUSI 1111 and 1112 or the passing of a placement test.

Major Requirements - 65 credits

MUSI 1701-1892	Instrument I, II	1-2 per course
MUSI 2701-2892	Instrument III, IV	1-2 per course
MUSI 3701-3892	Instrument V, VI	1-2 per course
MUSI 121	Applied Music for Non-Majors	1
MUSI 122	Applied Music for Non-Majors	1
MUSI 2091	Chamber Ensemble I Or	1
MUSI 221	Applied Music for Non-Majors	1
MUSI 2092	Chamber Ensemble II Or	1
MUSI 222	Applied Music for Non-Majors	1
MUSI 1241	University Choir I	1
MUSI 1242	University Choir II	1
MUSI 2241	University Choir III	1
MUSI 2242	University Choir IV	1
MUSI 3241	University Choir V	1
MUSI 3242	University Choir VI	1
MUSI 4241	University Choir VII	1
MUSI 4242	University Choir VIII	1
MUSI 4510	Conducting II: Choral	2
EDUC 2021	History and Philosophy of Education	3
EDUC 2022	Society and Education	3
EDUC 2031	Developmental Psychology	3
EDUC 2032	Learning Psychology	3
EDUC 2870	The Exceptional Student Population	4
EDUC 4011	Evaluation and Assessment	3
EDUC 4050	Curriculum Design	2
EDUC 4551	Integration of Basic Knowledge and Communication Skills	1
EDUC 4552	Integration of Professional Skills	1

MUED 1091	Field Experiences in Music Education I	1
MUED 2080	Field Experiences in Music Education II	2
MUED 3080	Clinical Experiences in Music Education	2
MUED 3301	Strategies and Techniques I: General Vocal	2
MUED 3302	Strategies and Techniques II: General Vocal	2
MUED 4401	Elementary Methods: The Teaching of Music	3
MUED 4411	Secondary Methods: The Teaching of Music	3
MUED 4915	Student Teaching in Music: General-Vocal	4
HIST 3010	Historical Process of the United States of America	3

Prescribed Distributive Requirements - 6 credits

Six (6) credits selected from the following courses:

MUED 3303	Vocal Strategies and Techniques III: Diction	2
MUED 3330	Strategies and Techniques of Musical Instruments I: String Or	2
MUED 3331	Strategies and Techniques of Musical Instruments II: Percussion Or	2
MUED 3332	Instrumental Strategies and Techniques III: Metals Or	2
MUED 3333	Instrumental Strategies and Techniques IV: Wind-Wood	2
MUSI 1160	Vocal Coaching I	1
MUSI 1161	Vocal Coaching II	1
MUSI 1162	Vocal Coaching III	1
MUSI 1163	Vocal Coaching IV	1
MUSI 1164	Vocal Coaching V	1
MUSI 1165	Vocal Coaching VI	1
MUSI 1166	Vocal Coaching VII	1
MUSI 1167	Vocal Coaching VIII	1
MUSI 1168	Vocal Coaching IX	1
MUSI 1169	Vocal Coaching X	1
MUSI 2093	Chamber Ensemble III Or	1
MUSI 321	Applied Music for Non-Majors	1
MUSI 2094	Chamber Ensemble IV Or	1
MUSI 322	Applied Music for Non-Majors	1
MUSI 2011	Chamber Ensemble and Vocal Instruction I	2
MUSI 2012	Chamber Ensemble and Vocal Instruction II	2
MUSI 2013	Chamber Ensemble and Vocal Instruction III	2
MUSI 2014	Chamber Ensemble and Vocal Instruction IV	2
MUSI 3975	Special Topics	1 to 6
MUSI 4600	Foundations of Audio-Recording	3

Music Education: Instrumental (BM)

The Bachelor of Music Degree in Music Education: Instrumental offers the curricular content required by the Department of Education of Puerto Rico for Teacher Certification in Fine Arts with a specialization in Music Education: Instrumental, applicable to the elementary and secondary (K-12) levels. Graduates from the program also qualify as teacher in the Specialized Schools of Music.

The study program has been conceptualized under the firm conviction that the perception, understanding and sensitivity towards the art of music are fundamental in the formation of teachers committed to the evolution of music and its teaching. This formation is promoted by means of the study of the processes in the creation of music, including its history, literature, analysis techniques, its conducting and performance.

Participation in the creation of music of a high artistic value is an integral part of the study program. Students will have the opportunity to take individualized classes in their main instrument, and in a secondary instrument. They will also participate in chamber ensembles, and in larger ensembles like the Concert Band, the Choirs, or the University Symphony Orchestra.

The musical knowledge and skills are integrated with theory and practice in the music education courses, and in the education courses. The education courses deal with topics such as: techniques for choral or instrumental teaching, teaching methodologies, technology and teaching experiences.

Students entering the program will take a placement test in rudiments of music and in their instrument. This test must

be approved more with a minimum of 70 percent; otherwise students must take preparatory courses. Preparatory courses exist for those students who need them.

All students in the Bachelor of Music Degree in Music Education: Instrumental must comply with the admission requirements, the Satisfactory Academic Progress Norms, the graduation requirements established by the Teacher Education Program (TEP) and with the Music Practice Teaching requirements. Students in this major will take MUED 1091 instead of EDUC 1080, MUED 2080 for EDUC 2890, MUED 3080 for EDUC 3015 and MUED 4915 or 4916 for EDUC 4015.

The San Germán Campus is authorized to offer this Program.

Competencies Profile of Graduates

The Bachelor of Music in is designed to develop the competencies that will enable students to:

Knowledge

Demonstrate knowledge and understand:

1. The materials, methodologies, curricular development and technologies to design significant educational experiences.

2. The diverse techniques of musical arrangement.

3. The processes to adapt music by using arrangement techniques for a variety of instrumental and vocal sets.

4. The theoretical foundations and the appropriate auditory skills to harmonize music on the keyboard or the guitar.

5. The main historical periods in the analysis, preparation of scores for practice and performance of representative repertoire of different styles, forms and cultures.

6. The elements of music as they have evolved through different historical and cultural periods: tempo, melody, harmony, tone, texture and form.

7. The process of musical composition, solving arguments on the esthetic properties and style of an ample selection of representative literature of the main eras, genres and composers.

8. The music education curriculum for the elementary

and secondary levels and their historical, philosophical, esthetic, methodological, psychological and educational foundations.

9. The particular mechanisms of evaluation and assessment for the teaching of music, appropriate for the elementary and secondary levels.

Skills

1. Interpret music at first sight with the exactitude necessary to contribute successfully to the development of the sets in which they participate and to use that knowledge as an indispensable tool when giving class and when selecting repertoire of different levels of difficulty.

2. Develop their musical quality and the technical skills necessary to obtain an expressive musical performance, when presenting a repertoire of varied styles as a soloist, in sets and as a teacher in the classroom.

3. Demonstrate the capacity to use their conducting technique as a means to effectively communicate an interpretation that is musical and aesthetically convincing.

4. Fortify their skills on the piano keyboard and on the guitar, so that they can use both instruments as additional learning tools for themselves and in the design of experiences for their students in the classroom.

5. Develop skills to take rhythmical, melodic and harmonic dictation.

6. Demonstrate the use of advanced auditory skills that will allow them to read and sing the parts of a musical score for instrumental or vocal groups for analysis, preparation for practice or conducting.

7. Organize successful practices for instrumental and vocal sets.

8. Develop skills and the necessary technical knowledge in conducting, to take a score and to prepare it for practice, locating indicators that will allow for giving form to an appropriate interpretation.

9. Perform an ample selection of repertoire.

10. Use technology to strengthen the pedagogical and professional work.

Attitudes

1. Form a good documented judgment on the capacity that the historical and cultural context has to influence the musical production of a country.

2. Value Puerto Rican and Latin American music, its history and its musical genres, in the planning of a curriculum that includes a variety of musical experiences, such as playing, creating, listening, improvising, arranging and appreciating, among others.

3. Show commitment with the scope of music education.

4. Regard technology as a process, a tool able to extend their musical and creative capacities.

Requirements for the Bachelor of Music Degree in Music Education: Instrumental

General Education Requirements	48 credits
Core Course Requirements	31 credits
Major Requirements	65 credits
Prescribed Distributive Requirements	6 credits
Elective Courses	3 credits
Total	153 credits

General Education Requirements - 48 credits

Forty-eight (48) credits of General Education are required for this Program. In addition to GEHS 2010, students will take GEHS 4020 or 4030 in the Historical and Social Context category. Students will take courses GEPE 4040 and GEPE 3010 or 3020 to fulfill the six credits required in the Philosophical and Esthetic Thought category.

Core Course Requirements - 31 credits

MUSI 1401	Theory and Sight-Reading	2
MUSI 1461	Piano: Group Class I	1
MUSI 1462	Piano: Group Class II	1
MUSI 2411	Harmony and Counterpoint I	3
MUSI 2412	Harmony and Counterpoint II	3
MUSI 2470	Keyboard Harmony	2
MUSI 3311	Western Music: History and Literature I	3
MUSI 3312	Western Music: History and Literature II	3
MUSI 3320	History of Puerto Rican And Latin American Music	2
MUSI 3440	Form and Analysis	3
MUSI 4431	Orchestration and Arranging I	2
MUSI 4500	Conducting I	3
MUED 4436	Technology in Music	3

Education

Note: Course MUSI 1401 requires courses MUSI 1111 and 1112 or the passing of a placement test.

Major Requirements - 65 credits

MUSI 1701-1892	Instrument I, II	1-2 per course
MUSI 2701-2892	Instrument III, IV	1-2 per course
MUSI 3701-3892	Instrument V, VI	1-2 per course
MUSI 121	Applied Music for Non-Majors	1
MUSI 122	Applied Music for Non-Majors	1
MUSI 2091	Chamber Ensemble I	1
	Or	
MUSI 221	Applied Music for Non-Majors	1
MUSI 2092	Chamber Ensemble II	1
	Or	
MUSI 222	Applied Music for Non-Majors	1
MUSI 1231	Concert Band I	1
MUSI 1232	Concert Band II	1
MUSI 2231	Concert Band III	1
MUSI 2232	Concert Band IV	1
MUSI 3231	Concert Band V	1
MUSI 3232	Concert Band VI	1
MUSI 4231	Concert Band VII	1
MUSI 4232	Concert Band VIII	1
	Or	
MUSI 1251	University Orchestra I	1
MUSI 1252	University Orchestra II	1
MUSI 2251	University Orchestra III	1
MUSI 2252	University Orchestra IV	1
MUSI 3251	University Orchestra V	1
MUSI 3252	University Orchestra VI	1
MUSI 4251	University Orchestra VII	1
MUSI 4252	University Orchestra VIII	1
MUSI 4520	Conducting II: Instrumental	2
EDUC 2021	History and Philosophy of Education	3
EDUC 2022	Society and Education	3
EDUC 2031	Developmental Psychology	3
EDUC 2032	Learning Psychology	3
EDUC 2870	The Exceptional Student Population	4
EDUC 4011	Evaluation and Assessment	3

EDUC 4050	Curriculum Design	2
EDUC 4551	Integration of Basic Knowledge and Communication Skills	1
EDUC 4552	Integration of Professional Skills	1
MUED 1091	Field Experiences in Music Education I	1
MUED 2080	Field Experiences in Music Education II	2
MUED 3080	Clinical Experiences in Music Education	2
MUED 3330	Strategies and Techniques of Musical Instruments I: String	2
MUED 3331	Strategies and Techniques of Musical Instruments II: Percussion	2
MUED 4401	Elementary Methods: The Teaching of Music	3
MUED 4411	Secondary Methods: The Teaching of Music	3
MUED 4916	Student Teaching in Music: Instrumental	4
HIST 3010	Historical Process of the United States of America	3

Prescribed Distributive Requirements - 6 credits

Six (6) credits selected from the following courses:

MUED 3332	Instrumental Strategies and Techniques III: Metals	2
MUED 3333	Instrumental Strategies and Techniques IV: Wind-Wood	2
MUSI 2093	Chamber Ensemble III Or	1
MUSI 321	Applied Music for Non-Majors	1
MUSI 2094	Chamber Ensemble IV Or	1
MUSI 322	Applied Music for Non-Majors	1
MUSI 2011	Chamber Ensemble and Vocal Instruction I	2
MUSI 2012	Chamber Ensemble and Vocal Instruction II	2
MUSI 2013	Chamber Ensemble and Vocal Instruction III	2
MUSI 2014	Chamber Ensemble and Vocal Instruction IV	2
MUSI 3130	Popular Music Workshop I	1

MUSI 3131	Popular Music Workshop II	1
MUSI 3132	Popular Music Workshop III	1
MUSI 3133	Popular Music Workshop IV	1
MUSI 3975	Special Topics	1 to 6
MUSI 4600	Foundations of Audio-Recording	3

Minor in Music

Study of music.

The San Germán Campus is authorized to offer this minor.

Requirements for the Minor in Music - 21 credits

Courses for the Minor in Music

MUSI 121	Applied Music for Non-Majors	1
MUSI 122	Applied Music for Non-Majors	1
MUSI 1111	Rudiments and Auditory Training I	2
MUSI 1112	Rudiments and Auditory Training II	2
MUSI 1401	Theory and Sight-Reading	2
MUSI 1461	Piano: Group Class I	1
MUSI 1462	Piano: Group Class II	1
MUSI 3320	History of Puerto Rican And Latin American Music	2

Note: Nine (9) additional credits chosen from courses with the code MUSI and with the academic advisory of a professor from the Department of Music.

Minor in Music History

Study of music history.

The San Germán Campus is authorized to offer this minor.

Requirements for the Minor in Music History - 21 credits

Courses for the Minor in Music History

MUSI 121	Applied Music for Non-Majors	1
MUSI 122	Applied Music for Non-Majors	1
MUSI 1111	Rudiments and Auditory Training I	2
MUSI 1112	Rudiments and Auditory Training II	2
MUSI 1461	Piano: Group Class I	1
MUSI 3311	Western Music: History and Literature I	3

| MUSI 3312 | Western Music: History and Literature II | 3 |
| MUSI 3320 | History of Puerto Rican And Latin American Music | 2 |

Note: Six (6) additional credits chosen from courses with the code MUSI and with the academic advisory of a professor from the Department of Music.

Minor in Music Theory

Study of music theory.

The San Germán Campus is authorized to offer this minor.

Requirements for the Minor in Music Theory - 21 credits

Courses for the Minor in Music Theory

MUSI 121	Applied Music for Non-Majors	1
MUSI 122	Applied Music for Non-Majors	1
MUSI 1111	Rudiments and Auditory Training I	2
MUSI 1112	Rudiments and Auditory Training II	2
MUSI 1401	Theory and Sight-Reading	2
MUSI 1461	Piano: Group Class I	1
MUSI 2411	Harmony and Counterpoint I	3
MUSI 2412	Harmony and Counterpoint II	3

Note: Six (6) additional credits chosen from courses with the code MUSI and with the academic advisory of a professor from the Department of Music.

Music Business Management (A)

The Associate Degree in Music Business Management has the aim of providing students with the resources necessary to carry out successfully the management of any company related to the music business, such as their own or private disco graphic companies, music publishing companies and the management and promotion of concerts.

The Program aims to develop the following competencies: to know the different types of musical enterprise models, the legal principles and the different types of contracts related to this industry. In addition, it proposes to familiarize the student with the techniques available to finance musical works. Similarly, the program endeavors to make students aware of the possibilities of self-employment in a highly competitive world.

The Metropolitan Campus is authorized to offer this Program.

Competencies Profile of Graduates

The program is designed to permit the development of the following competencies:

Knowledge

To demonstrate knowledge and understanding of:

1. the structures of the contemporary musical industry.

2. the managerial, legal and technological foundations to develop businesses related to the musical industry.

Skills

1. To apply the managerial principles to develop competitive small and medium sized businesses.

2. To communicate effectively the basic strategies of marketing of the diverse musical services.

3. To apply effective managerial strategies for team work.

Attitudes

1. To appreciate the value of the undertaking and the ethical values in the entertainment industry.

2. To creatively visualize the opportunities in the entertainment industry.

3. To recognize the importance of interpersonal relations between artists and managers.

Requirements for the Associate Degree in Music Business Management

General Education Requirements	27 credits
Major Requirements	36 credits
Total	63 credits

General Education Requirements - 27 credits

GESP	Spanish - Select 6 credits from the GESP category	6
GEEN	English - Select 6 credits from the GEEN category	6
GEP-GECF 1010	Introduction to the Christian Faith	3
GEP-GEIC 1010	Information and Computing Technologies	3
GEP-GEMA 1200	Fundamentals of Algebra	3
GEP-GEHS 2010	Historical Process of Contemporary Puerto Rico	3

GEP-GEEC 2000	Entrepreneurial Culture	3

Major Requirements - 36 credits

MUBA 1000	Introduction to Business in the Music Industry	3
MUBA 1100	Music Marketing	3
MUBA 1200	Principles of Management of Artists	3
MUBA 1400	Legal Aspects in The Music Business	3
ACCT 1161	Introduction to Financial Accounting	4
BADM 2050	Business Finance (For Associate Degree Candidates)	3
ITEC 1100	Introduction to Information Technology	3
ENTR 2200	Foundations of Entrepreneurship	3
MAEC 2211	Principles of Microeconomics	3
MKTG 1210	Introduction to Marketing	3
MUSIC 531	Theory and Sight Singing I	3
MUSIC 1563	Group Piano I Or	2
MUSIC 1661	Group Guitar I	2

Music Enterprises Management (BBA)

The Bachelor of Business Administration in Music Business Management has as its main purpose to train students with the necessary skills to perform successfully in the management of any organization linked to the music business.

The Metropolitan Campus is authorized to offer this program.

Program Goals

1. Develop producers or managers of musical business activities.

2. Promote entrepreneurs in the music industry.

3. Train professionals who can work in music business in corporate environments.

Program Objectives

1. Promote knowledge and fundamentals of business administration with an interdisciplinary approach, committed to self-management in the management of music companies.

2. Create professionals trained to direct and manage new companies, both small and medium, related to the music industry, and capable of developing innovative marketing strategies and processes that respond to the changes and trends of this industry.

3. Promote ethical behavior in professional practice and knowledge of the discipline from an integral vision of it.

Competencies Profile of Graduates

The Program is designed to develop the skills that allow the student:

Knowledge

Demonstrate knowledge and understanding of:

1. the managerial, legal and technological foundations to develop business within the contemporary music industry.

Skills

1. Apply management theories to develop small and medium enterprises.

2. Integrate the marketing strategies applicable to the various services in the area of music.

3. Identify opportunities in the music industry to undertake creative projects.

4. Develop innovative processes that contribute to the profitability and sustainability of businesses in the music industry.

Attitudes

1. Demonstrate appreciation for ethical values in the entertainment industry.

2. Show commitment to positive interpersonal relationships between professionals in the music industry and with teamwork.

Requirements of the Bachelor in Business Administration in Music Enterprises Management

General Education Requirements	48 credits
Core Requirements	25 credits
Major Requirements	30 credits
Related Requirements	15 credits
Free Electives	3 credits
Total	121 credits

General Education Requirements - 48 credits

Forty eight (48) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees."

Core Requirements - 25 credits

ACCT 1161	Introduction to Financial Accounting	4
BADM 1900	Fundamentals of Business Management	3
MAEC 2140	Fundamentals of Quantitative Methods	3
MAEC 2211	Principles of Microeconomics	3
OMSY 3030	Business Communication in Spanish Or	3
OMSY 3040	Business Communication in English	3
MAEC 2221	Basic Statistics	3
MKTG 1210	Introduction to Marketing	3
ENTR 2200	Foundations of Entrepreneurship	3

Major Requirements - 30 credits

MUBA 1000	Introduction to Business in the Music Industry	3
MUBA 1100	Music Marketing	3
MUBA 1200	Principles of Management of Artists	3
MUBA 1300	Musical Fundamentals for Enterprises	3
MUBA 1400	Legal Aspects in The Music Business	3
MUBA 2000	Dissemination, Promotion and Distribution of Music in Internet	3
MUBA 3000	Introduction to Musical Production	3
MUBA 4000	Project Management in the Musical Industry	3
MUBA 397_	Special Topics	1
MUBA 4971	Integrated Seminar	3

MUBA 397_: The student will take three Special Topic courses, each one of one (1) credit.

Related Requirements - 15 credits

MKTG 2220	Marketing Management	3
MKTG 2223	Consumer Behavior	3
MKTG 3230	Integrated Marketing Communication	3
MKTG 3233	Public Relations in Organizations	3
MKTG 4244	Global Marketing	3

Note: *Special Topics: One will be offered per trimester, the topics will be related to new industry trends and new technologies, documentation procedures and laws, creativity development tools, etc. Most topics can be taken by students of the program, regardless of the year they are studying. If any of the topics requires an advanced level of knowledge, the prerequisite courses will be established.

Natural Sciences (BS)

The Bachelor of Science degree in Natural Sciences aims to prepare professionals in natural sciences with a multidisciplinary approach. The program focuses on the study of the foundations of the natural sciences and is supplemented with the study of courses of specific areas to be determined by the student in agreement with his academic adviser and the approval of the department director. It provides a flexible and innovative programmatic vision, which promotes the integral development of students to expand their cognitive and creative capacities, as well as the critical judgment necessary to perform in the contemporary world.

The Aguadilla, Bayamón and Metropolitan campuses are authorized to offer this Program.

Program Goals

The Natural Sciences Program aims to prepare professionals capable of:

1. promote the comprehensive preparation of students to acquire the skills necessary to perform in fields related to Natural Sciences in the contemporary world.

2. possess a vision and attitude responsible for the implications of their actions in the field of Natural Sciences.

Program objectives

1. Provide knowledge in the area of Natural Sciences complemented with the study of courses in specific areas.

2. Apply critical thinking processes when conducting qualitative and quantitative analyzes in a scientific context.

3. Carry out activities related to their field, with an ethical commitment, that guarantees the credibility of the results and conclusions it generates.

Competencies Profile of Graduates

This Program is designed to develop the competencies that will enable students to:

Knowledge

1. Describe the basic concepts of the Natural Sciences.

2. Demonstrate the processes related to the administration, analysis and interpretation of data.

Skills

1. Compose written works using scientific information.

2. Use basic laboratory equipment correctly.

3. Complete the statistical analysis of the data obtained experimentally to reach valid conclusions.

Attitudes

1. Respond in an ethical and responsible manner when handling data analysis in experimental processes.

Admission Requirements

In addition to the admission requirements established in this Catalog, students of this Program must be interviewed when this is necessary. If an interview is necessary for online education students who will attend courses outside Puerto Rico, this may be conducted through the means available to students. The interview will be supervised by a proctor in the place where the student is located as determined by the University.

Requirements for the Bachelor of Science Degree in Natural Sciences

General Education Requirements	48 credits
Core Course Requirements	30 credits
Major Requirements	30 credits
Elective Courses	12 credits
Total	120 credits

General Education Requirements - 48 credits

Forty eight (48) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees." The students of this program will take GEMA 1200 in the Basic Skills in Mathematics category.

Core Course Requirements - 30 credits

BIOL 1101	General Biology I	3
BIOL 1102	General Biology II	3
BIOL 1103	Biology Skills Laboratory I	1
BIOL 1104	Biology Skills Laboratory II	1
MATH 1511	Precalculus I	3
MATH 1512	Precalculus II	3
CHEM 1111	General Chemistry I	4
CHEM 2212	General Chemistry II	4
PHYS 3001	General Physics I	4
PHYS 3002	General Physics II	4

Major Requirements - 30 credits

Students will take 30 major credits selected from the following disciplines: Biology (BIOL), Chemistry (CHEM), Mathematics (MATH), Forensic Science (FORS), Marine Sciences (MASC), Biotechnology (BIOT), Microbiology (MICR), Environmental Sciences (EVSC), Environmental Management (EVMA), Toxicology (TOXI), Biomedical Sciences (BMSC), Biopsychology (BIPS) or Computer Sciences (COMP). The major requirements will be established in agreement between the student and the academic adviser, with the approval of the department director.

Of the 30 credits, students must take at least 12 credits in 3000 or 4000 level courses. 1000 level courses will not be accepted as major courses.

The courses below are recommended for those students interested in applying to the School of Optometry of the Inter-American University of Puerto Rico. (This sequence of courses does not guarantee admission to the School of Optometry.)

Interested students must have passed a minimum of ninety

(90) credits at the bachelor's level between general education, core and concentration courses, which must include the following specific courses or their equivalents:

BIOL 1101	General Biology I	3
BIOL 1102	General Biology II	3
BIOL 1103	Biology Skills Laboratory I	1
BIOL 1104	Biology Skills Laboratory II	1
BIOL 2153	Biostatistics	3
BIOL 3105	General Microbiology	4
CHEM 1111	General Chemistry I	4
CHEM 2212	General Chemistry II	4
CHEM 2221	Organic Chemistry I	4
CHEM 2222	Organic Chemistry II	4
CHEM 4220	Biochemistry	4
GEEN	English - Select 6 credits from the GEEN category	6
GESP	Spanish - Select 6 credits from the GESP category	6
GEHS	Social Studies - Select 6 credits from the GEHS category	6
GEPE	Humanities - Select 6 credits from the GEPE category	6
MATH 2251	Calculus I	5
PHYS 3001	General Physics I	4
PHYS 3002	General Physics II	4
PSYC 1051	General Psychology I	3

Networks and Telecommunications (BS)

Networks and Telecommunications (BS)

The Networks and Telecommunications Program offers the most advanced courses in the field of data networks, telecommunications, shared computerized resource environments through corporate networks and administration of these systems based on Windows, Netware, Linux, IBM iSeries and Cisco, among others. Emphasis is on the integration of basic managerial concepts to fortify managerial knowledge. The Program is designed to prepare graduates to plan, design, install and administer networks that will support the functions of the company. It is also expected that graduates will be able to install and configure data network access servers, Internet, Intranet and Extranet electronic mail servers, database servers, storage servers and will be able to develop programming necessary for applications in Internet as well as solutions for radio networks, security technologies, management of voice and video networks, and design the distribution of wiring and optical fiber. Several of the courses offered provide the foundation that will permit

graduates to continue their professional improvement and be certified in various professional certification programs. Major courses with the code NTEL must be passed with a minimum grade of C.

The Ponce Campus is authorized to offer this Program in campus and through online education.

Admission Requirements

Admission requirements to the Bachelor of Science Program with major in Networks and Telecommunications are those that apply generally to the University's Undergraduate Programs.

1. A high school general grade point index of 2.00 or more.

2. Students whose academic indices are from 2.00 to 2.99 will be required to have an interview for the admission to the Program.

Requirements for the Bachelor of Science Degree in Networks and Telecommunications

General Education Requirements	48 credits
Major Requirements	73 credits
Elective Courses	3 credits
Total	124 credits

General Education Requirements - 48 credits

Forty-eight (48) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees." Students of this Program will take GEMA 1200 in the Basic Skills in Mathematics category.

Major Requirements - 73 credits

NTEL 1200	Introduction to Networks and Telecommunications	3
NTEL 2101	Network Protocols	3
NTEL 2150	Design of Telecommunications Distribution	3
NTEL 2300	Linux Networks	3
NTEL 3110	Installation and Administration of Network Systems	3
NTEL 3230	Introduction to Java Programming	3
NTEL 3310	E-Mail Server	3
NTEL 3401	Minicomputers Operations	3
NTEL 3520	Internet Programming and Administration	3
NTEL 3600	SQL Database Server	3
NTEL 3770	Wireless Networks	3

NTEL 3971	Special Topics in Telecommunications	3
NTEL 4150	Security in Networks	3
NTEL 4500	Audit and Controls in Network Systems	3
NTEL 4520	Voice and Video Networks	3
NTEL 4610	Storage Networks	3
NTEL 4750	Network Management	3
NTEL 4910	Practicum in Telecommunications	3
ACCT 1161	Introduction to Financial Accounting	4
BADM 1900	Fundamentals of Business Management	3
ITEC 1100	Introduction to Information Technology	3
ITEC 1200	Programming Algorithms	3
MAEC 2140	Fundamentals of Quantitative Methods	3
MKTG 1210	Introduction to Marketing	3

Minor in Networks and Telecommunications

The Minor in Networks and Telecommunications is for students enrolled in the Bachelor in Computer Science to acquire knowledge and skills in the area of computer networks. Students of other majors may opt for this minor if they have taken the courses ITEC 1100 and COMP 2120.

The Ponce Campus is authorized to offer this Minor.

Requirements for the Minor in Network and Telecommunications - 21 credits

Courses for the Minor in Network and Telecommunications

NTEL 1200	Introduction to Networks and Telecommunications	3
NTEL 2101	Network Protocols	3
NTEL 2150	Design of Telecommunications Distribution	3
NTEL 3110	Installation and Administration of Network Systems	3
NTEL 3600	SQL Database Server	3
NTEL 3770	Wireless Networks	3
NTEL 4150	Security in Networks	3

Nursing (AAS)

The Nursing Program has as its mission the formation of nurses able to offer competent, sensible, effective, safe, and quality nursing care to the client person, family and community. The Program aims to produce graduates prepared to:

1. Provide care with autonomy and with interdisciplinary collaboration and sensitivity to ethical-legal and cultural values and directed to the achievement of the best results for the client.

2. Coordinate care by applying leadership and management skills that lead to the highest quality care with the minimum of cost.

3. Assume a commitment as a member of the discipline in harmony with the standards of the practice.

For the development of this professional diverse and flexible modalities of study are offered. This facilitates mobility from the level of the associate degree to the Bachelor.

The Associate Program of the Aguadilla and Metropolitan campuses is accredited by the *Accreditation Commission for Education in Nursing* (ACEN) (**http://www.acenursing.org**).

The Aguadilla, Arecibo, Barranquitas, Bayamón, Guayama, Metropolitan, Ponce and San Germán campuses are authorized to offer the Associate Degree in Nursing In addition, the Metropolitan Campus is authorized to offer the associate degree at its University Center in Caguas.

Competencies Profile of Graduates

This Associate of Applied Science degree in Nursing is designed to develop the competencies that will enable students to:

Knowledge

1. Demonstrate scientific and humanistic knowledge of the nursing discipline when analyzing biopsychosocial and spiritual aspects in the different stages of growth and development.

2. Know the nursing process as an instrument for making clinical decisions while offering a safe and quality care.

Skills

1. Demonstrate up-to-date clinical skills in therapeutic interventions when you offer care to the client throughout the continuum of health-disease in structured scenarios.

2. Demonstrate care management, coordination skills and effective collaboration as a member of the interdisciplinary team.

3. Use communication skills, critical thinking and the use of technology to maintain the quality of care offered to the client.

Attitudes

1. Demonstrate responsibility and ethical-legal commitment with humanistic care in response to the changing needs of society.

2. Demonstrate responsibility and commitment with their own development and that of the profession.

Major requirements are offered in a four-year program with an option to leave the Program upon completing the requirements of the first two years. Each year is equivalent to a level in which courses have been organized and developed according to their level of complexity. In the first two years (levels I and II) technical (associate) knowledge and skills are presented; in the last two years (levels III and IV) those corresponding to the professional level (generalist) are presented. This scheme articulates both levels of preparation, (associate degree and Bachelor's Degree in nursing) by integrating knowledge and skills.

Students in the Nursing Program are exempt from taking GEHP 3000 - Well-being and Quality of Life.

Admission Requirements

1. Comply with the admissions requirements established in the General Catalog.

2. To be a candidate for admission to the Associate Program in Nursing, candidates must have a minimum grade point index 2.50 from their high school or place of origin.

Requirements of Clinical Practice

To be admitted to a practice agency the following is required:

1. A current certificate of no criminal record issued by the Police of Puerto Rico.

2. A health certificate valid for one year issued by the Health Department.

3. Evidence of vaccination against Hepatitis B.

4. Evidence of vaccination against chickenpox or chickenpox titer tests.

Some agencies and courses have additional requirements. Students are responsible for complying with any other requirement imposed by the practice agency. Among these are: An updated certificate of CPR, a negative dope test, a nose and throat culture and a negative certificate of sexual offender.

Transfer Requirements

1. Comply with the admissions requirements for transfer students established in the General Catalog.

2. Admission of transfer students to the Program or to take courses of the major with combined registration requires the previous authorization of both Program directors.

Academic Progress Requirements of the Nursing Program:

1. Comply with all Satisfactory Progress Norms established in the General Catalog.

2. Pass all courses in Nursing and the course GEMA 1000 (Quantitative Reasoning) with a minimum grade of C.

3. Students who do not pass a major course with a minimum grade of C in their third intent will be dropped from the Program.

Graduation Requirements

1. For the Associate Degree in Nursing students are required to complete 50% of the major credits in the campus from which they expect to receive the degree.

2. All students who are candidates for graduation in the Associate of Nursing program must graduate with a minimum grade point average of 2.50.

3. Students, upon completing the requirements of the first two years of study, have the option to request certification of the Associate Degree in Nursing in order to apply for the board examination.

Requirements for the Associate of Applied Science Degree in Nursing

General Education Requirements	24 credits
Major Requirements	41 credits
Total	65 credits

General Education Requirements - 24 credits

GESP	Spanish - Select 6 credits from the GESP category	6
GEEN	English - Select 6 credits from the GEEN category	6
GEP-GECF 1010	Introduction to the Christian Faith	3
GEP-GEIC 1010	Information and Computing Technologies	3
GEP-GEMA 1000	Quantitative Reasoning	3
GEP-GEHS 2010	Historical Process of Contemporary Puerto Rico Or	3
GEP-GEEC 2000	Entrepreneurial Culture	3

Major Requirements - 41 credits

NURS 1111	Fundamentals of Nursing	4
NURS 1112	Practice of Fundamentals of Nursing	2
NURS 1130	Pharmacological Aspects	3
NURS 1231	Fundamentals of Adult Care I	6
NURS 1232	Practice of Adult Care I	2
NURS 2141	Fundamentals of Maternal-Neonatal Care	3
NURS 2142	Practice in Maternal-Neonatal Care	2
NURS 2233	Fundamentals of Adult Care II	6
NURS 2234	Practice of Adult Care II	2
NURS 2351	Fundamentals of Pediatric Care	3
NURS 2352	Practicing Pediatric Care	2
NURS 2361	Fundamentals of Psychosocial Care	3
NURS 2362	Practice of Psychosocial Care	2
NURS 2970	Transition Seminar	1

Nursing (BSN)

Nursing (BSN)

The Nursing Program has as its mission the formation of nurses able to offer competent, sensible, effective, safe, and quality nursing care to the client person, family and community. The Program aims to produce graduates prepared to:

1. Provide care with autonomy and with interdisciplinary collaboration and sensitivity to ethical-legal and cultural values and directed to the achievement of the best results for the client.

2. Coordinate care by applying leadership and management skills that lead to the highest quality care with the minimum of cost.

3. Assume a commitment as a member of the discipline in harmony with the standards of the practice.

The Bachelor's Program of the Aguadilla, Arecibo and Metropolitan campuses is accredited by the *Accreditation Commission for Education in Nursing (ACEN)* (**http://www.acenursing.org**).

The Bachelor's Program of the Barranquitas, Bayamón, Guayama, Ponce and San Germán campuses is accredited by the *Commission on Collegiate Nursing Education (CCNE)* (http://www.aacnnursing.org/CCNE).

The Aguadilla, Arecibo, Barranquitas, Bayamón, Guayama, Metropolitan, Ponce and San Germán campuses are authorized to offer the Bachelor of Science Degree in Nursing.

Competencies Profile of Graduates

The Bachelor of Science in Nursing is designed to develop the competencies that will enable students to:

Knowledge

1. Demonstrate theoretical and practical knowledge integrated into the safe and effective nursing care provided to individuals, families and communities.

2. Know the use of nursing interventions to prevent disease, and to promote, protect, maintain and restore health.

3. Know critical thinking skills to make clinical judgments and to use research findings for the continuous improvement of the nursing practice.

Skills

1. Use assessment and therapeutic interventions skills when providing nursing care in diverse scenarios so they can improve the expected health care results.

2. Apply skills of communication, collaboration, critical thought, and the use of technology as a provider and

coordinator of care and as a future member of the profession.

3. Act as leaders and managers of the care that you are seeking to provide.

Attitudes

1. Apply humanistic care in the nursing practice to promote protection, optimization and the preservation of human dignity.

Major requirements are offered in a four-year program with an option to leave the Program upon completing the requirements of the first two years. Each year is equivalent to a level in which courses have been organized and developed according to their level of complexity. In the first two years (levels I and II) technical (associate) knowledge and skills are presented; in the last two years (levels III and IV) those corresponding to the professional level (generalist) are presented. This scheme articulates both levels of preparation, (associate degree and Bachelor's Degree in nursing) by integrating knowledge and skills.

Students in the Nursing Program are exempt from taking GEHP 3000 - Well-being and Quality of Life.

Admission Requirements

1. Comply with the admissions requirements established in the General Catalog.

2. To be a candidate for admission to the Bachelor's Program in Nursing, candidates must have a minimum grade point index 2.50 from their high school or place of origin.

3. To be a candidate for admission to the third level (third year courses) of the Bachelor of Science Degree in Nursing, students must:

   a. Have satisfactorily completed the requirements of the first two years of the Degree in Nursing or,

   b. Present evidence of holding an Associate Degree in Nursing from an accredited and recognized institution of higher education. Candidates having an Associate Degree must complete any general education requirement established by the Institution for awarding the degree.

   c. Present at the time of admission to the Program evidence of any permanent license they possess.

Requirements of Clinical Practice

To be admitted to a practice agency the following is required:

1. A current certificate of no criminal record issued by the Police of Puerto Rico.

2. A health certificate valid for one year issued by the Health Department.

3. Evidence of vaccination against Hepatitis B.

4. Evidence of vaccination against chickenpox or chickenpox titer tests.

Some agencies and courses have additional requirements. Students are responsible for complying with any other requirement imposed by the practice agency. Among these are: An updated certificate of CPR, a negative dope test, a nose and throat culture and a negative certificate of sexual offender.

Transfer Requirements

1. Comply with the admissions requirements for transfer students established in the General Catalog.

2. Admission of transfer students to the Program or to take courses of the major with combined registration requires the previous authorization of both Program directors.

Academic Progress Requirements of the Nursing Program:

1. Comply with all Satisfactory Progress Norms established in the General Catalog.

2. Pass all courses in Nursing and the course GEMA 1000 (Quantitative Reasoning) with a minimum grade of C.

3. Students who do not pass a major course with a minimum grade of C in their third intent will be dropped from the Program.

Graduation Requirements

1. Students are required to complete 50% of the major credits in the campus from which they expect to receive the degree.

2. Students must take course NURS 4980 in the campus where they expect to graduate, except in special situations with the previous authorization of the Director of the Program.

3. All students who are candidates for graduation must

graduate with a minimum grade point average of 2.50.

4. Students, upon completing the requirements of the first two years of study, have the option to request certification of the Associate Degree in Nursing in order to apply for the board examination.

Requirements for the Bachelor of Science Degree in Nursing

General Education Requirements	45 credits
Major Requirements	72 credits
Elective Courses	3 credits
Total	120 credits

General Education Requirements - 45 credits

Forty-five (45) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees." Students of this Program are exempt from taking the course GEHP 3000 in the Health and Quality of Life category.

Major Requirements - 72 credits

NURS 1111	Fundamentals of Nursing	4
NURS 1112	Practice of Fundamentals of Nursing	2
NURS 1130	Pharmacological Aspects	3
NURS 1231	Fundamentals of Adult Care I	6
NURS 1232	Practice of Adult Care I	2
NURS 2141	Fundamentals of Maternal-Neonatal Care	3
NURS 2142	Practice in Maternal-Neonatal Care	2
NURS 2233	Fundamentals of Adult Care II	6
NURS 2234	Practice of Adult Care II	2
NURS 2351	Fundamentals of Pediatric Care	3
NURS 2352	Practicing Pediatric Care	2
NURS 2361	Fundamentals of Psychosocial Care	3
NURS 2362	Practice of Psychosocial Care	2
NURS 2970	Transition Seminar	1
NURS 3100	Dimensions of Professional Practice	3
NURS 3115	Introduction to The Nursing Research Process	3
NURS 3120	Health Assessment	4
NURS 3140	Intervention in Psychosocial Transitions	2
NURS 3190	Professional Intervention During the Life Cycle	4
NURS 4180	Nursing Care of Family and Community	4
NURS 4911	Practice in Professional Interventions During the Life Cycle	3
NURS 4914	Practice in Nursing Care to the Family and Community	4
NURS 4980	Integrated Workshop	4

Minor in Nursing Management

The Minor in Nursing Management is directed to strengthen in the students the leadership competencies necessary in the administration of nursing services, in various health scenarios.

The Aguadilla, Arecibo, Bayamón, Barranquitas, and San Germán campuses are authorized to offer this Minor.

Requirements for the Minor in Nursing Management - 24 credits

Courses for the Minor in Nursing Management

BADM 1900	Fundamentals of Business Management	3
HRMA 3000	Organization Behavior	3
HRMA 2100	Human Resource Administration	3
HRMA 3100	Leadership and Supervision	3
HRMA 3200	Labor Security and Hygiene	3
HRMA 3400	Training and Development	3
HRMA 3500	Labor Legislation	3
HRMA 4100	Syndication and Collective Bargaining	3

Minor in Gerontology for Nursing

The Arecibo Campus is authorized to offer this Minor.

Requirements for the Minor in Gerontology for Nursing - 18 credits

Courses for the Minor in Gerontology for Nursing

GERO 2000	Introduction to Gerontology	3
GERO 2010	Neuropsychology of the Elderly Adult	3
GERO 3310	Ethical and Legal Aspects in Gerontology	3
GERO 3311	Loss and Death	2
GERO 3312	Trends and Controversies in Elderly Adult Care	2
GERO 4313	Alterations of the Health Cycle - Disease in the Elderly Adult	3
GERO 4915	Clinical Practicum in Gerontology	2

Occupational Therapy (AS)

The Associate of Science in Occupational Therapy has as its mission to offer students an educational program of the highest quality. It is designed to offer students scientific knowledge based on the concepts and principles of natural, social and humanistic sciences. In occupational therapy, the human being is seen as a holistic being: body, mind and spirit.

The program aims to prepare a health paraprofessional to provide specialized treatment under the supervision of an Occupational Therapist properly qualified by the pertinent agencies. The Program aims to promote independence, productivity, quality of life and rehabilitation in the occupation areas to facilitate a state of health and general well-being in the clients.

It aims to prepare the student as an Occupational Therapy Assistant through development of skills that support and facilitate the adaptation process of clients with physical and emotional incapability. It incorporates the new trends and technology in the field.

Graduate of this program will be prepared to work in hospitals, schools, rehabilitation centers, health care programs in the home, hospices, psycho-social care centers, and special education centers.

The Ponce Campus is authorized to offer this Program.

Admission Requirements

1. Comply with all the admission requirements established for admission in the General Catalog of the Inter-American University of Puerto Rico.

2. Have a minimum average of 2.50 of high school or its equivalent for admission to the Program.

3. Complete the Admission Application to the Associate of Science in Occupational Therapy in the Department of Health Sciences.

Go through the process of general guidance through the Faculty of the program.

Retention Requirements

1. Meet all the academic progress norms established in the current General Catalog of the Inter American University of Puerto Rico.

2. Pass all major courses with a minimum grade of C, with exception of the Practice Courses (OCTH 2923 and OCTH 2924) that must be passed with a

minimum grade of B.

3. Students obtaining a grade less than C twice in the same course or in three different courses of the major will be placed on probation for a period not greater than one academic year. Students, who, during the probationary period, do not reach the required minimum grade point index may not continue in the Program, but may choose to request admission to another study program.

Practice requirements

To be admitted to the practice of the Associate of Science in Occupational Therapy requires:

1. have a minimum overall average of 2.50.

2. Negative Criminal Record Certificate issued in the last 30 days by the Puerto Rico Police Department.

3. provide a Health Certificate issued by the Department of Health or an authorized physician during the last year.

4. evidence of vaccines against Hepatitis B.

5. evidence of Chickenpox vaccine or Chickenpox titers.

6. certificates of CPR, HIPAA, Ethics and Intervention Techniques in nonviolent crises.

7. any other requirement required by the agency and the Department of Health of Puerto Rico.

Graduation Requirements

1. Students must pass all major courses with a minimum grade of C.

2. Pass the practice courses with a minimum grade of B (OCTH 2923 and OCTH 2924).

3. Comply with the graduation requirements established by the current General Catalog of the Inter-American University of Puerto Rico.

4. Reach a general index of 2.00 or higher.

Requirements for the Associate of Science in Occupational Therapy

General Education Requirements	24 credits
Major Requirements	49 credits
Total	73 credits

General Education Requirements - 24 credits

GESP	Spanish - Select 6 credits from the GESP category	6
GEEN	English - Select 6 credits from the GEEN category	6
GEP-GECF 1010	Introduction to the Christian Faith	3
GEP-GEIC 1010	Information and Computing Technologies	3
GEP-GEMA 1000	Quantitative Reasoning	3
GEP-GEHS 2010	Historical Process of Contemporary Puerto Rico Or	3
GEP-GEEC 2000	Entrepreneurial Culture	3

Major Requirements - 49 credits

OCTH 1000	Introduction to Occupational Therapy	3
OCTH 1031	Therapeutic Modalities I	3
OCTH 1050	Human Development in The Occupations Throughout the Life Cycle	3
OCTH 1060	Anatomy and Human Physiology	3
OCTH 1111	Physical Dysfunction I	3
OCTH 1120	Processes in Occupational Therapy	2
OCTH 1121	Occupational Therapy Applied to Pediatrics I	3
OCTH 1132	Therapeutic Modalities II	3
OCTH 1141	Occupational Therapy Applied to Psycho-Social Dysfunction I	3
OCTH 2022	Occupational Therapy Applied to Pediatrics II	3
OCTH 2042	Occupational Therapy Applied to Psycho-Social Dysfunction II	3
OCTH 2102	Physical Dysfunction II	3
OCTH 2135	Occupational Therapy in Daily Activities	3
OCTH 2923	Clinical Practice I	3
OCTH 2924	Clinical Practice II	5
OCTH 2975	Integration Seminar	3

Office Systems Administration (AA)

The Associate of Arts Degree in Office Systems Administration is designed to provide students the opportunity of developing the fundamental skills and fundamental knowledge of this level, that train them to work effectively as professional administrative support personnel in office systems administration.

The requirements for admission, academic progress, and graduation are those established by this Catalog.

The student must pass the required courses of the major with a minimum grade of C.

The Aguadilla, Arecibo, Barranquitas, Fajardo, Guayama, Metropolitano, Ponce, and San Germán campuses are authorized to offer this Program. The Barranquitas, Metropolitan and Ponce campuses are authorized to offer this Program through online education.

Competencies Profile of Graduates

The Associate of Arts Program in Office Systems Administration is designed to develop the competencies that will enable students to:

Knowledge

Demonstrate knowledge and understanding of:

1. the tasks and responsibilities of an office administrator.

2. the diverse application programs to perform their profession.

3. the current legislation and regulations on the confidentiality of documents of the customers that the company serves.

4. the innovations and the changes in the profession and the technological advances that affect them.

5. the ethical and legal norms relevant to the social responsibility of a company and the individuals that integrate it.

Skills

1. Produce documents with the speed and accuracy that will permit them to perform effectively in different offices.

2. Develop strategies for the best operation of the office

systems.

3. Be able to communicate in the oral and written form, in Spanish as well as in English, making use of diverse means that facilitate the achievement of the company's objectives.

4. Use diverse technological resources that will facilitate the processes of office systems management.

Attitudes

1. Recognize the importance of commitment and loyalty to the company by preserving ethical and legal principles.

2. Demonstrate courtesy, cooperation, assertiveness, discretion, confidentiality, responsibility, enthusiasm and respect for diversity, with the aim of offering a service of excellence.

3. Demonstrate a disposition to maintain effective interpersonal relations in and outside the company.

Requirements for the Associate of Arts Degree in Office Systems Administration

General Education Requirements	24 credits
Major Requirements	35 credits
Total	59 credits

General Education Requirements - 24 credits

GESP	Spanish - Select 6 credits from the GESP category	6
GEEN	English - Select 6 credits from the GEEN category	6
GEP-GEMA 1000	Quantitative Reasoning	3
GEP-GECF 1010	Introduction to the Christian Faith	3
GEP-GEIC 1010	Information and Computing Technologies	3
GEP-GEHS 2010	Historical Process of Contemporary Puerto Rico Or	3
GEP-GEEC 2000	Entrepreneurial Culture	3

Major Requirements - 35 credits

OMSY 1101	Information Processing I	4
OMSY 1102	Information Processing II	4
OMSY 2000	Production of Business Documents	4
OMSY 2040	Electronic Spreadsheets	3

OMSY 2060	Administration of Documents and Databases	4
OMSY 2233	Information Processing in Offices of Legal Affairs	4
OMSY 2240	Information Processing in Offices of Health Services	3
OMSY 2250	Human Resources in the Organizational Environment	3
OMSY 3030	Business Communication in Spanish Or	3
OMSY 3040	Business Communication in English	3
OMSY 3080	Office Administration	3

Office Systems Administration (BA)

Office Systems Administration (BA)

The Bachelor of Arts in Office Systems Administration responds to the need of satisfying the demands of the market for professionals of administrative support with knowledge in the operation of electronic systems, with the knowledge, techniques, procedures, and skills required to perform successfully in the office. This Program offers the cultural background and the basic knowledge of office administration that allow the professional administrative support personnel to participate effectively in decision-making, analysis of data, managing and processing of information, oral and written communication and in establishing effective interpersonal relations.

This Program aims to prepare professional administrative support personnel with the skills and knowledge necessary to explore self-employment as a viable alternative in other professional careers. In addition, it aspires to prepare self-directed students that can work in their future job with a minimum of supervision and that have the ability to work in a team.

The Program articulates the levels of preparation of the associate and Bachelor's Degrees. During the first years of studies the student is offered the knowledge and skills of the associate degree, while during the last two years, there is emphasis on the knowledge and skills at the professional or bachelor degree levels. This way, it offers students the opportunity to obtain the Associate of Arts Degree in Office Systems Administration, once the student completes the 60 credits that are stipulated as requirements.

Students must pass all the required courses of the major

with a minimum grade of C.

The Professional Practice course may be accepted for students who request it and show that they have satisfactorily met the established requirements. The University will only accept experiences that correspond to the degree that students hope to obtain from the Institution. This acceptance requires that students:

1. Make a formal request to the Director of the Department in which they show evidence of having worked without interruption for a minimum term of three years in a position similar or equivalent to an office administrator.

2. Present a Portfolio in which there is evidence of:

   a. years of experience.

   b. period of time employed.

   c. positions or positions occupied.

   d. description of duties.

   e. equipment used.

   f. copy of evaluations received.

   g. work that evidences skills developed in the position occupied.

   h. any other evidence of the professional work during the time of employment.

3. Pass an interview process, which will be coordinated by the Director of the Department along with faculty members.

4. Pay 50% of the tuition cost of the course OMSY 4910 - Professional Practicum.

This Program, in the Bayamón Campus, is accredited by the *Accreditation Council for Business Schools and Programs (ACBSP)* (https://www.acbsp.org/).

The Aguadilla, Arecibo, Barranquitas, Fajardo, Guayama, Metropolitano, Ponce, and San Germán campuses are authorized to offer this Program. The Aguadilla, Metropolitan and Ponce campuses are authorized to offer this Program through online education.

Competencies Profile of Graduates

The Bachelor of Arts Program in Office Systems Administration is designed to develop the competencies that will enable students to:

Knowledge

Demonstrate knowledge and understanding of:

1. the tasks and responsibilities of an office administrator.

2. the diverse application programs to perform their profession.

3. the current legislation and regulations on the confidentiality of documents of the customers that the company serves.

4. the innovations and the changes in the profession and the technological advances that affect them.

5. the ethical and legal norms relevant to the social responsibility of a company and the individuals that integrate it.

6. the different areas related to the administration of companies - accounting, marketing, economics, statistics, finances.

7. the managerial functions related to planning, organization, effective administration of time and human resources.

8. the effective techniques to explore self-employment.

Skills

1. Produce documents with the speed and accuracy that will permit them to perform effectively in different offices.

2. Apply the knowledge of managerial functions for problem solving and decision making that may occur in the company.

3. Develop strategies for the best operation of the office systems.

4. Be able to communicate in the oral and written form, in Spanish as well as in English, making use of diverse means that facilitate the achievement of the company's objectives.

5. Use diverse technological resources that will facilitate the processes of office systems management.

6. Plan, design and offer professional improvement activities in the company's areas of interest.

Attitudes

1. Recognize the importance of commitment and loyalty to the company by preserving ethical and legal principles.

2. Demonstrate courtesy, cooperation, assertiveness, discretion, confidentiality, responsibility, enthusiasm and respect for diversity, with the aim of offering a service of excellence.

3. Demonstrate a disposition to maintain effective interpersonal relations in and outside the company.

4. Demonstrate social responsibility in the performance of the tasks inherent to the profession.

5. Evaluate self-employment as a viable alternative in your professional life.

6. Show a commitment to learning and professional growth.

Requirements for the Bachelor of Arts Degree in Office Systems Administration

General Education Requirements	48 credits
Major Requirements	62 credits
Related Requirements	7 credits
Elective Courses	3 credits
Total	120 credits

General Education Requirements - 48 credits

Forty-eight (48) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees".

Major Requirements - 62 credits

OMSY 1010	Speed Writing in Spanish	3
OMSY 1101	Information Processing I	4
OMSY 1102	Information Processing II	4
OMSY 2000	Production of Business Documents	4
OMSY 2040	Electronic Spreadsheets	3
OMSY 2060	Administration of Documents and Databases	4
OMSY 2233	Information Processing in Offices of Legal Affairs	4
OMSY 2240	Information Processing in Offices of Health Services	3
OMSY 2250	Human Resources in the Organizational Environment	3
OMSY 3000	Health Services Billing	3
OMSY 3030	Business Communication in Spanish Or	3
OMSY 3040	Business Communication in English	3
OMSY 3050	Graphic Art Design for Offices	3
OMSY 3080	Office Administration	3
OMSY 3500	Interactive Business Communication in English	3
OMSY 4010	Integration of Application Programs in Office Administration	3
OMSY 4500	Telecommunications in The Office	3
OMSY 4910	Professional Practicum	3
OMSY 4920	Design and Administration of Training	3
OMSY 4970	Integration Seminar	3

Related Requirements - 7 credits

ACCT 1161	Introduction to Financial Accounting	4
BADM 1900	Fundamentals of Business Management	3

Minor in Administration of Electronic Medical Records

The Minor in Administration of Electronic Medical Records is a complementary academic offering for the bachelors' programs offered in the Metropolitan Campus. This program aims to develop in the students the knowledge and the skills necessary to perform the tasks required in the field of the billing of health services and electronic medical records in medical offices, hospitals and related areas. In addition, with the acquired knowledge, students will be able to create their own business to offer these services.

All campuses are authorized to offer this minor. The Aguadilla, Metropolitan and Ponce campuses are authorized to offer this minor through online education.

Requirements for the Minor in Administration of Electronic Medical Records - 18-19 credits

Courses for the Minor in Administration of Electronic Medical Records

OMSY 1000	Keyboarding Skills Or	3
OMSY 1101	Information Processing I	4
OMSY 2400	Medical Terminology	3

OMSY 2500	Legal and Ethical Aspects in Medical Information	3
OMSY 3000	Health Services Billing	3
OMSY 3430	Electronic Codification of Diagnoses and Procedures	3
OMSY 3440	Administration of The Electronic Medical Record	3

Minor in Office Administration

The Minor in Office Systems Administration is designed to offer students the opportunity to acquire additional knowledge and skills that will allow them to perform administrative support tasks in different offices.

All campuses are authorized to offer this minor. The Aguadilla, Metropolitan and Ponce campuses are authorized to offer this minor through online education.

Requirements for the Minor in Office Administration - 18 - 19 credits

Courses for the Minor in Office Administration

OMSY 1101	Information Processing I	4
OMSY 1102	Information Processing II	4
OMSY 2040	Electronic Spreadsheets	3
OMSY 2060	Administration of Documents and Databases	4
OMSY 2233	Information Processing in Offices of Legal Affairs Or	4
OMSY 2240	Information Processing in Offices of Health Services	3

Operations Management of Manufacturing and Services (BBA)

Operations Management of Manufacturing and Services (BBA)

Operations Management of Manufacturing and Services is an area of significant impact in business procedures. The aim of this Program is to provide the student with the knowledge for an effective application of production factors in manufacturing and service activities.

The Program is designed to train professionals in the management of the operations of local and global companies, to use available technology, with emphasis on manufacturing and service operations.

It aims to train professionals who can function in industry and business who appreciate labor diversity and who act ethically, with ecumenical-Christian values and with social responsibility.

The graduate of this Program will demonstrate knowledge in the principles of operations management and will exhibit skills in applying the concepts of the discipline.

Students must pass the required core and major courses with a minimum grade of C.

This Program, in the Bayamón Campus, is accredited by the *Accreditation Council for Business Schools and Programs (ACBSP)* (https://www.acbsp.org/).

The Bayamón, Metropolitan and Ponce Campus are authorized to offer this Program. The Ponce Campus is authorized to offer this Program through online education.

Competencies Profile of Graduates

Knowledge

To demonstrate knowledge and understanding of:

1. the principles of management of operations of manufacturing and services in a globalized, ethical and ecological environment.

2. the importance of the management of operations of manufacturing and services to maintain to innovation and competitiveness of organizations of production and services.

3. new trends in the discipline and their use in manufacturing and services operations.

Skills

1. To apply the concepts of management of operations of manufacturing and services in the productive administration of organizations of production and services.

2. To use sciences of production and operations in its administration as tools to foment enterprising thought.

3. Apply the concepts of the discipline of the management of manufacturing and service operations to analyze the productive factors for decision making.

Attitudes

1. To value the ethical aspects in the management of production and services.

2. To appreciate the labor diversity as a critical element in the area of production and operations.

3. Possess a proactive attitude towards social responsibility as an entrepreneur and citizen.

Requirements for the Bachelor of Business Administration Degree in Operations Management of Manufacturing and Services

General Education Requirements	48 credits
Core Course Requirements	41 credits
Major Requirements	24 credits
Prescribed Distributive Requirements	6 credits
Elective Courses	3 credits
Total	122 credits

General Education Requirements - 48 credits

Forty-eight (48) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees." Students in this Program will take GEMA 1200 in the Basic Mathematical Skills category.

Core Course Requirements - 41 credits

ACCT 1161	Introduction to Financial Accounting	4
ACCT 1162	Introduction to Managerial Accounting	4
BADM 1900	Fundamentals of Business Management	3
BADM 3900	Information Systems in Organizations	3
BADM 4300	Managerial Economics	3
FINA 2101	Corporate Finance I	3
MAEC 2140	Fundamentals of Quantitative Methods	3
MAEC 2211	Principles of Microeconomics	3
MAEC 2212	Principles of Macroeconomics	3
MAEC 2221	Basic Statistics	3
MAEC 2222	Managerial Statistics	3
MKTG 1210	Introduction to Marketing	3
OMSY 3030	Business Communication in Spanish Or	3
OMSY 3040	Business Communication in English	3

Major Requirements - 24 credits

OPMS 3000	Operations Management of Manufacturing and Service	3
OPMS 3340	Management Policies and Strategies	3
OPMS 3500	Logistics and Supply Chain Management	3
OPMS 3820	Management Sciences	3
OPMS 4300	Service Operations Management	3
OPMS 4500	Project Management	3
ENTR 2200	Foundations of Entrepreneurship	3
HRMA 3200	Labor Security and Hygiene	3

Prescribed Distributive Requirements - 6 credits

Six (6) additional credits in 3000 and 4000 level courses in Business Administration (BADM).

Minor in Operations Management of Manufacturing and Services

This Minor responds to the need to provide students with more theoretical and practical knowledge about the theories related to the creation and administration of products and services. They would obtain knowledge in the area of manufacturing and service. The minor is aimed at students of the Bachelor degree programs in Business Administration (BBA).

The Bayamon, Metropolitan and Ponce campuses are authorized to offer this minor. The Ponce Campus is authorized to offer this minor through online education.

Requirements for the Minor in Operations Management of Manufacturing and Services - 18 credits

Courses for the Minor in Operations Management of Manufacturing and Services

OPMS 3000	Operations Management of Manufacturing and Service	3
OPMS 3340	Management Policies and Strategies	3
OPMS 3500	Logistics and Supply Chain Management	3
OPMS 3820	Management Sciences	3
OPMS 4300	Service Operations Management	3
HRMA 3200	Labor Security and Hygiene	3

Optical Science Technology (AAS)

The Associate Degree Program in Applied Sciences in Optical Sciences offers a university preparation that produces the development of the technical skills and the

competences of the profession; it offers, in addition, a scientific base and the most recent knowledge in the professional field.

The courses aim to prepare the student for carrying out the functions and operations required in the optician profession. They aim to enable the student to perform in the optics market.

In order to obtain the permanent license in Puerto Rico, the graduate must pass the Board's examination offered by the Examining Board of Optician.

In practice the profession in another jurisdiction, it will be governed by that jurisdiction.

Students must be available to do the laboratories and practices in the centers authorized by the University.

The Ponce Campus is authorized to offer this Program.

Program goals

The program, among its goals, aspires to:

1. Obtain optical knowledge to address the most common visual conditions in the general population.

2. Handle ophthalmic equipment and material.

3. Provide patients with an excellent service.

4. Application of ethics in the field of optical sciences.

Graduate competency profile

The Associate Degree in Applied Sciences in Technology in Optical Sciences is designed to develop the skills that allow the student to become a professional with mastery of technical skills and the ability to communicate clearly and logically. You must be aware of your role within the health team and that you can adjust to the technological forces that dictate a constant update of your professional career. An optical sciences professional must possess the following competencies:

The Program is designed to develop the skills that allow the student to:

Knowledge

1. Understand optical terminology.

2. Know the signs and symptoms of subnormal vision and disorders that alter the mechanism of vision.

3. Understand the indications and contraindications for the use of contact lenses.

4. Interpret eyewear purchase orders.

Abilities

1. Operate the automatic and manual machinery for the processing of ophthalmic lenses.

2. Cut the ophthalmic lenses according to the dimensions of the selected frames.

3. Organize the inventory of cleaning materials and instruments.

4. Mount the ophthalmic lenses in the selected frames.

5. Use the basic measuring equipment of lenses and calipers.

6. Perform polishing, duplicating, scribing, and edge finishing operations on ophthalmic lenses.

7. Apply the techniques to take ocular and facial measurements for single vision, multifocal and corrective lenses.

8. Assist the optometrist or ophthalmologist to perform preliminary field and visual acuity examinations and document the patient's clinical history.

Attitudes

1. Demonstrate professional ethics in the practice of dispensing prescriptions.

2. Show behaviors of respect towards the individual.

3. Demonstrate responsibility and commitment to their profession.

Admission Requirements

1. Meet the admission requirements established in the General Catalog of the University.

2. Provide a certificate of no criminal record.

3. Provide an updated certificate of health, issued by the Department of Health or an authorized doctor.

4. Have a minimum high school grade point index of 2.50. In the case of transfer or intra transfer, the institutional norm will be followed.

Graduation Requirements

For graduation this program will require the approval of all courses of the major with a minimum grade of C.

Requirements for the Associate Degree in Applied Science in Optical Science Technology

General Education Requirements	24 credits
Major Requirements	41 credits
Total	65 credits

General Education Requirements - 24 credits

GESP	Spanish - Select 6 credits from the GESP category	6
GEEN	English - Select 6 credits from the GEEN category	6
GEP-GEMA 1000	Quantitative Reasoning	3
GEP-GEHS 2010	Historical Process of Contemporary Puerto Rico	3
GEP-GECF 1010	Introduction to the Christian Faith	3
GEP-GEIC 1010	Information and Computing Technologies	3

Major Requirements - 41 credits

OPST 1003	Fundamentals of Optics	2
OPST 1010	Principles of Biology	3
OPST 1011	Ophthalmic Materials I	3
OPST 1012	Ophthalmic Materials II	3
OPST 1020	Anatomy and Physiology of the Eye	3
OPST 1111	Fundamentals of Physics I	3
OPST 1112	Fundamentals of Physics II	3
OPST 2000	Legal and Ethical Considerations	2
OPST 2004	Contact Lenses I	2
OPST 2005	Contact Lenses II	3
OPST 2010	Prescription Dispatch	3
OPST 2020	Subnormal Vision	3
OPST 2021	Entrepreneurial Development	2
OPST 2103	Ophthalmic Materials III	2
OPST 2913	Supervised Practice	4

Organizational Behavior (BBA)

Program description

The Bachelor of Business Administration in Organizational Behavior is a multidisciplinary program that combines knowledge of administrative sciences with the study of the effect of individual and group behavior on organizational performance. The main purpose of the program is to prepare professionals capable of managing the organization, promoting organizational development, understanding group dynamics, training and preparing human resources to generate changes that help improve individual and organizational performance.

The Aguadilla Campus is authorized to offer this program.

Program Goals

The Bachelor of Business Administration in Organizational Behavior has the following goals:

1.   Develop competent professionals in the integration of administrative sciences with the study of organizational behavior to improve the performance of the corporation.
2.   Train administrators in managing group dynamics and team development to promote individual and organizational development.
3.   Prepare professionals who are aware of the effect of organizational behavior in the development of innovative strategies that promote company growth.

Program Objectives

The Bachelor of Business Administration in Organizational Behavior has the following objectives:

1.   Improve the leadership skills of administrators to influence the organizational culture and promote the continuous improvement of companies.
2.   Apply administrative and leadership strategies that promote the development of the organization.
3.   Promote an organizational culture capable of promoting innovative strategies to quickly adapt to the demands of a highly competitive business environment.

Competencies Profile of the Graduate

The Bachelor of Business Administration in Organizational Behavior is designed to develop the competencies that allow the student to:

Knowledge

1. Describe how management knowledge and skills support business performance.

2. Discuss the theories of organizational behavior (OB) and organizational development (OD).

3. Explain how interpersonal, group, and diversity dynamics impact the organization.

4. Recognize how managers help the organization adapt to constant changes in a highly dynamic and competitive business environment.

Skills

1. Use administrative principles, tools and techniques to identify and solve organizational problems.

2. Apply the concepts of business administration taking into consideration the organizational culture.

3. Integrate the theory and considerations of the impact of organizational behavior in the administrative process.

Attitudes

1. Integrate ethics and social responsibility in the process of influencing organizational culture.

2. Recognize improvement and professional development as an essential factor in the continuous improvement process of both the individual and the organization.

Graduation Requirements

1. Pass core and major courses with a minimum grade of C.

2. Meet the graduation requirements established by the General Catalog.

REQUIREMENTS FOR THE BACHELOR IN BUSINESS ADMINISTRATION IN ORGANIZATIONAL BEHAVIOR

General Education Program Requirements	48 credits
Core Requirements	47 credits
Major Requirements	24 credits
Electives	3 credits
Total	122 credits

General Education Program Requirements – 48 credits

Forty-eight (48) credits are required as explained in the General Education Requirements for Bachelor's Degree section. Students in this program will take GEMA 1200 in the category of Basic Skills in Mathematics.

Core Requirements – 47 credits

ACCT 1161	Introduction to Financial Accounting	4
ACCT 1162	Introduction to Managerial Accounting	4
BADM 1900	Fundamentals of Business Management	3
BADM 3313	The Law and The Businesses	3
BADM 3900	Information Systems in Organizations	3
FINA 2101	Corporate Finance I	3
INTB 2100	Introduction to International Business	3
MAEC 2140	Fundamentals of Quantitative Methods	3
MAEC 2211	Principles of Microeconomics	3
MAEC 2212	Principles of Macroeconomics	3
MAEC 2221	Basic Statistics	3
MAEC 2222	Managerial Statistics	3
MKTG 1210	Introduction to Marketing	3
OMSY 3030	Business Communication in Spanish	3
OMSY 3040	Business Communication in English	3
OPMS 3000	Operations Management of Manufacturing and Service	3

Major Requirements – 24 credits

HRMA 3000	Organization Behavior	3
HRMA 2100	Human Resource Administration	3
HRMA 3400	Training and Development	3
ORBE 2100	Group Dynamics	3
ORBE 3100	Research methods and their applications in organizational behavior	3
ORBE 4000	Ethics and Organizational Management	3
ORBE 4100	Organizational Development	3
ORBE 4200	Integrating Seminar in Organizational Behavior	3

Pharmacy Technician (AAS)

The course of studies for the Associate of Applied Science Degree in Pharmacy Technician aims to develop technicians with the necessary knowledge and skills that will enable them to perform efficiently and responsibly as Pharmacy Technicians.

The Program is designed to offer the scientific knowledge and the necessary technical abilities to work in a pharmacy, handle technological equipment and comply with the

regulations governing the profession.

The Aguadilla, Barranquitas, Guayama, Ponce and the University Center of Caguas of the Metropolitan Campus are authorized to offer this Program.

Admission Requirements:

To be considered for admission, students must meet the following requirements:

1. Have a minimum high school or university grade point index of 2.25.

2. Have an interview with the Associate of Applied Science Degree in Pharmacy Technician Coordinator or Committee.

3. Submit the following documents:

   a. a certificate of no criminal record.

   b. a negative drug test.

   c. a certificate of vaccination against Hepatitis B.

Retention Requirements

1. Meet the Academic Progress norms established in the General Catalog and those of the corresponding campus.

2. Pass all courses of the Program for the Associate of Applied Science Degree in Pharmacy Technician and the course Quantitative Reasoning (GEMA 1000) with a minimum grade of C.

Requirements for the Associate of Applied Science Degree in Pharmacy Technician

General Education Requirements	24 credits
Major Requirements	50 credits
Total	74 credits

General Education Requirements - 24 credits

GESP	Spanish - Select 6 credits from the GESP category	6
GEEN	English - Select 6 credits from the GEEN category	6
GEP-GEMA 1000	Quantitative Reasoning	3
GEP-GEHS 2010	Historical Process of Contemporary Puerto Rico	3
GEP-GECF 1010	Introduction to the Christian Faith	3
GEP-GEIC	Information and Computing	3

1010	Technologies	

Major Requirements - 50 credits

PHAR 1150	Theoretical Pharmacy	3
PHAR 1155	Pharmaceutical Legislation	2
PHAR 1271	Applied Pharmacology I	3
PHAR 1280	Dosage	2
PHAR 1220	Human Anatomy and Physiology	3
PHAR 1221	Pharmacy Practice I	3
PHAR 1290	Pharmaceutical Mathematics	3
PHAR 2200	General Chemistry for Pharmacy Technicians	3
PHAR 2210	Commercial Pharmacy	3
PHAR 2222	Pharmacy Practice II	3
PHAR 2260	Pharmacognosy	3
PHAR 2272	Applied Pharmacology II	3
PHAR 2190	Integration of Pharmacy Concepts	2
PHAR 2913	Supervised Practice I	3
PHAR 2914	Supervised Practice II	4
PHAR 2915	Supervised Practice III	4
BIOL 1003	Basic Biological Concepts	3

Photography (A)

The Associate Degree in Photography is designed to provide theoretical and practical preparation in photography. Graduates will be able to work as professionals in commercial areas of the photographic field.

The Bayamón Campus is authorized to offer this Program.

Goals of the program

1. To train a professional photographer with a high ethical and aesthetic sense who dominates the field of photography.

2. Develop a professional in the photography area with knowledge that will allow you to establish your own business.

Program objectives

1. Create and manipulate digital images for professional photography.

2. Master the use and management of the camera, lighting equipment and computer programs to manipulate photographs.

3. Know the basic elements to develop a business model

in the field of professional photography.

4. Know the legal and ethical aspects of the field of professional photography.

Competencies Profile of Graduates

This Program is designed to develop the competencies that will enable students to:

Knowledge

1. Demonstrate knowledge of the foundations of professional photography work.

2. Demonstrate knowledge of the equipment and the computer programs used in the field of photography.

3. Recognize photography as a business option to put into practice the skills required in this professional field.

Skills

1. Use the inherent vocabulary to the discipline of photography correctly.

1. Integrate and apply the principles and foundations of both theory and practice in the field of photography in real situations in the world of work.

2. Install and operate equipment related to the field of photography.

3. Operate specialized computer programs used in the field of photography.

Attitudes

1. Make responsible decisions taking into consideration the ethical and moral aspects of the profession.

2. Recognize the necessity to stay updated in the technological advances in the field of photography.

Admission Requirements

1. All students interested in this program must meet the Admission Requirements to Associate Degree Programs established in the General Catalog of the Inter American University of Puerto Rico.

Transfer and Intra University Transfers Requirements

1. Meet the Admission Requirements for transfer students or intra university transfers established in the General Catalog of the University.

2. Have a minimum average of 2.50 in the university of origin.

Retention Requirements

1. Meet the Academic Progress Norms established in the General Catalog of the University.

2. Pass the courses required for the major with the minimum grade of C.

Graduation Requirements

1. Meet the Graduation Requirements established in the General Catalog of the University.

2. Complete all the Program requirements.

3. Obtain a minimum general average of 2.50.

Requirements for the Associate Degree in Photography

General Education Requirements	27 credits	
Major Requirements	27 credits	
Electives	6 credits	
Total	60 credits	

General Education Requirements - 27 credits

GESP	Spanish - Select 6 credits from the GESP category	6
GEEN	English - Select 6 credits from the GEEN category	6
GEP-GECF 1010	Introduction to the Christian Faith	3
GEP-GEIC 1010	Information and Computing Technologies	3
GEP-GEMA 1200	Fundamentals of Algebra	3
GEP-GEPE 3010	Art Appreciation	3
GEP-GEHS 2010	Historical Process of Contemporary Puerto Rico Or	3
GEP-GEEC 2000	Entrepreneurial Culture	3

Major Requirements - 27 credits

COMU 1025	Introduction to Graphic Production	3
COMU 1031	Photographic Techniques	3
COMU 1032	Photography Business	3
COMU 1045	Editorial Graphic Production	3
COMU 2610	Illumination in Photography	3

COMU 2621	Digital Photographic Manipulation	3
COMU 2622	Advanced Photography	3
COMU 2970	Seminar on New Trends in Photography	2
ENTR 2200	Foundations of Entrepreneurship	3

Physical Therapist Assistant (AS)

The Physical Therapist Assistant Program aims to develop competent paraprofessionals so they may offer high quality services in the rehabilitation field. It provides scientific knowledge based on concepts and principles from the natural sciences, social sciences and the humanities, as well as their applications to the field of the physical therapy. It is designed to prepare physical therapist assistants that offer treatment to individuals whose functional capacity is limited or in risk of being limited due to some disease or injury.

The Program guides students to the awareness of intervention strategies in the rehabilitation process. Graduates will work under the supervision of a physical therapist in institutions such as general and specialized hospitals; rehabilitation and home care centers; clinics and private offices; schools and industries.

In order to obtain the permanent license in Puerto Rico, graduates must pass the tests offered by the Examining Board of Physical Therapy of Puerto Rico. To practice the profession in another jurisdiction, students must abide by the regulations in force in that area. The major requirements must be approved with a minimum grade of C.

The Program is accredited by the *Commission on Accreditation in Physical Therapy Education (CAPTE)* (http://www.capteonline.org/home.aspx).

The Ponce Campus is authorized to offer this Program.

Admission Requirements

1. Meet the admission requirements established in the Inter American University General Catalog.

2. Complete the application for admission to the Physical Therapy Program in the Department of the Health Sciences.

3. Provide a certificate no criminal record issued by the police of Puerto Rico.

4. Provide a recent health certificate issued by the Health Department or an authorized doctor.

5. Provide evidence of vaccination against Hepatitis B.

6. Have minimum high school or equivalent grade point index of 2.50.

7. Have an interview with the faculty of the Program.

Retention Requirements

1. Meet all the academic progress norms established in the University's current General Catalog.

2. Pass all major courses with a minimum grade of C and maintain a minimum average of 2.00 upon completion of each academic term.

3. Students obtaining a grade less than C twice in the same course or in two courses of the major will be placed on probation for a period not greater than one academic year. Students, who, during the probationary period, do not reach the required minimum grade point index may not continue in the Program, but may choose to request admission to another study program.

Graduation Requirements

Students must pass all major courses with a minimum grade of C.

Requirements of the Associate of Science Degree in Physical Therapist Assistant

General Education Requirements	24 credits
Major Requirements	50 credits
Total	74 credits

General Education Requirements - 24 credits		
GESP	Spanish - Select 6 credits from the GESP category	6
GEEN	English - Select 6 credits from the GEEN category	6
GEP-GEMA 1000	Quantitative Reasoning	3
GEP-GECF 1010	Introduction to the Christian Faith	3
GEP-GEIC 1010	Information and Computing Technologies	3
GEP-GEHS 2010	Historical Process of Contemporary Puerto Rico Or	3
GEP-GEEC	Entrepreneurial Culture	3

2000

Major Requirements - 50 credits

PHTH 1000	Introduction to Physical Therapy	3
PHTH 1010	Principles of Patient Care	3
PHTH 1211	Anatomy and Physiology I	4
PHTH 1212	Anatomy and Physiology II	2
PHTH 1222	Therapeutic Modalities	5
PHTH 1223	Pathology	3
PHTH 2050	Dimension of Incapacity	2
PHTH 2051	Communication Skills in Physical Therapy	2
PHTH 2053	Cardiopulmonary Physical Therapy	3
PHTH 2054	Kinesiology and Functional Anatomy	3
PHTH 2055	Growth and Human Development	2
PHTH 2151	Orthopedic Rehabilitation	3
PHTH 2350	Neurological Rehabilitation	4
PHTH 2921	Internship in Physical Therapy I	2
PHTH 2922	Internship in Physical Therapy II	3
PHTH 2923	Internship in Physical Therapy III	4
PHTH 2990	Integration Seminar in Physical Therapy	2

Police Science (AA)

The Associate of Arts degree in Police Science is designed to develop the conceptual, technical and affective competencies in students, which are necessary for them to perform effectively as an officer of the law in the state and municipal environments. Upon finishing their study program, it is expected that the graduates will have an academic formation that will enable them to work as qualified professionals in their field. In addition, graduates will be given a profile of general and specialized competencies, which will enable them to occupy positions in the Police Force of Puerto Rico as well as in the Municipal Police. However, the graduates must meet the requirements in effect at the moment of requesting admission to the Police Department of Puerto Rico or the appropriate Municipal Police.

The Aguadilla, Arecibo, Bayamón, Barranquitas, Fajardo, Guayama, and Metropolitan campuses are authorized to offer this Program. Also, the Aguadilla Campus is authorized to offer this program in distance education.

Program Goals

The Associate of Arts Program in Police Science will promote the development of professionals with the knowledge, skills and attitudes necessary to perform effectively in the different components of the municipal or state police forces. The Associate of Arts Program in Police Science also aims to achieve the following specific goals as part of the integral formation of graduates:

1. Develop professionals focused on the mastery of knowledge framed in the new trends of the police science program.

2. Promote the understanding of the problems of criminality and delinquency from their causes and effects on society.

3. Promote research and the use of technology as ways to generate the production and construction of knowledge that may result in the improvement of the practices of prevention and intervention that are carried out in the area of police science.

4. Develop a critical and understanding attitude towards the social problems that affect a healthy coexistence in society.

5. Develop a commitment to the ethical-legal dimension of the professions related to the social function of law enforcement agents.

Program Objectives

The Associate of Arts Program in Police Science aims to develop the following general objectives.

1. Generate the theoretical and legal knowledge related to the area of police science and adjusted to the changes and the new trends of the profession.

2. Analyze the problems of criminality from their causes and social effects.

3. Use research and the technological advances for the production and construction of knowledge in the areas included in the police science field.

4. Apply the knowledge and skills of the discipline in solving problem and in decision making related to the police science areas.

5. Integrate to the professional practice the ethical-legal values and principles related to the field of police science.

Competencies Profile of Graduates

This Program is designed to develop the competencies of knowledge, skills and attitudes that will enable students to:

Knowledge

1. Know the legal theories and principles that serve as a base for the profession, as well as the structure and operation of police science.

2. Know the human and civil rights, and their legal and social implications in the context of police science.

Skills

1. Analyze the legal and social aspects of the justice systems for minors and adults.

2. Apply the scientific methodology and the technological resources available in the area of police science.

3. Apply rules, procedures, methods and strategies in problem solving in scenarios related to the area of police science.

Attitudes

1. Apply the ethical-legal values to the field of police science.

Graduation Requirements

1. Approve with a minimum grade of C all the courses that make up the Major Requirements.

Requirements for the Associate of Arts Degree in Police Science

General Education Requirements	21 credits
Major Requirements	39 credits
Total	60 credits

General Education Requirements - 21 credits

GESP	Spanish - Select 6 credits from the GESP category	6
GEEN	English - Select 6 credits from the GEEN category	6
GEP-GEIC 1010	Information and Computing Technologies	3
GEP-GEMA 1000	Quantitative Reasoning	3
GEP-GECF 1010	Introduction to the Christian Faith	3

GEP-GEHS 2010	Historical Process of Contemporary Puerto Rico Or	3
GEP-GEEC 2000	Entrepreneurial Culture	3

Major Requirements - 39 credits

CJUS 1010	Police and Community	3
CJUS 2010	Criminal Procedures in Justice Systems	3
CJUS 2050	Victims of Crime	3
CJUS 2070	Human and Civil Rights	3
CJUS 2075	Social Deviation	3
CJUS 2095	Ethics in Processes of Prevention and Police Intervention	3
CJUS 3025	Criminal Law	3
CJUS 3030	Interviews and Interrogations	3
CJUS 3035	Special Criminal Laws	3
CJUS 3250	Criminal Investigation	3
CJUS 4040	Evidence Management	3
PSYC 1051	General Psychology I	3
SOCI 2080	Criminal Justice System	3

Political Science (BA)

Political Science (BA)

The mission of the Political Science Program is to provide students with the theoretical and philosophical foundation of the principles of politics and to develop student skills in analyzing and interpreting the political scene and understanding political problems. The Program aims to prepare students to think independently, communicate effectively, understand and analyze complex political structures and how they work in the modern world.

The objective of this Program is to prepare students to work in careers related to public service and/or private enterprises, to continue studies in this discipline and in law, consulting, lobbying, communication media, advertisement agencies, and others. In Addition, the Program offers two minors: International Relations and Governmental Management.

The Metropolitan and San German campuses are authorized to offer this Program.

Competencies Profile of Graduates

The program is designed to develop the competencies that will allow students to:

Knowledge

1. Know the theoretical and social bases for the best understanding the political world.

2. Know the principles, the foundations and the processes in the development of political activity.

3. Know the main theories on international relations, political economy, and comparative politics and how these affect our social reality.

4. Know the theoretical principles of political research.

5. Know the use of new technology as a research tool and for the search of information in political science.

Skills

1. Apply their knowledge in different professional areas, such as law, education, media, public service and private enterprise.

2. Perform critical analyses of the political theories that help to understand the present political world.

3. Use the methods and processes of quantitative and qualitative research and their applications.

4. Critique and apply different methodological approaches in the political analysis process.

5. Use and integrate the new technology of the computer programs in political research and analysis.

Attitudes

1. Have a clear vision of the role of the social scientist in contemporary society.

2. Appreciate the political development of the human being and his society throughout the centuries.

3. Develop and evaluate lines of reasoning.

Requirements for the Bachelor of Arts Degree in Political Science

General Education Requirements	48 credits
Major Requirements	57 credits
Prescribed Distributive Requirements	9 credits
Elective Courses	6 credits
Total	120 credits

General Education Requirements - 48 credits

Forty-eight (48) credits are required as explained in the section "General Education Requirements for Bachelors'

Degrees."

Major Requirements - 57 credits

POLS 1011	Introduction to Political Science	3
POLS 2040	Government of the United States	3
POLS 2088	Government of the Commonwealth of Puerto Rico	3
POLS 2100	Political Analysis and Research Techniques	3
POLS 3000	WRITING FOR POLITICAL SCIENCE	3
POLS 3080	Political Economy	3
POLS 3100	Comparative Government and Politics	3
POLS 3150	Introduction to International Relations	3
POLS 3401	Classic Political Thought	3
POLS 3402	Modern Political Thought	3
POLS 3501	Political Systems of Latin America	3
POLS 3610	Relations Between the United States and Puerto Rico	3
POLS 3820	Public Administration	3
POLS 3910	Electoral Processes	3
POLS 4300	Public Policy	3
POLS 4700	SPECIAL TOPICS IN POLITICAL SCIENCE	3
POLS 4900	Seminar on Political Research	3
	Six additional credits from the course of POLS at the 3000 or 4000 level	6

Prescribed Distributive Requirements - 9 credits

Nine (9) credits from the following two groups of courses:

EVSC 1110	Introduction to Environmental Sciences	3
MAEC 2140	Fundamentals of Quantitative Methods	3
MAEC 2211	Principles of Microeconomics	3
MAEC 2212	Principles of Macroeconomics	3
MAEC 2221	Basic Statistics	3
MAEC 3243	International Economics	3
PSYC 3001	Statistical Methods I	3
SOCI 3645	Studies of Population	3
POLS 3060	PRINCIPLES OF ECONOMICS FOR POLITICAL SCIENCE	3
BADM 3313	The Law and The Businesses	3
EVSC 2210	Environmental Policies, Laws and Regulations	3

POLS 3050	Ethics, Religion and Politics	3
POLS 3170	International Conflicts	3
POLS 3200	Political Sociology	3
POLS 3450	LEGISLATIVE PROCESS	3
POLS 3700	Women and Their Political Development	3
POLS 3800	Government, Ecology and Public Environmental Public Policy	3
POLS 4110	Constitutional Law	3
SOCI 2080	Criminal Justice System	3

Empirical Applications

EVSC 1110	Introduction to Environmental Sciences	3
MAEC 2140	Fundamentals of Quantitative Methods	3
MAEC 2211	Principles of Microeconomics	3
MAEC 2212	Principles of Macroeconomics	3
MAEC 2221	Basic Statistics	3
MAEC 3243	International Economics	3
PSYC 3001	Statistical Methods I	3
SOCI 3645	Studies of Population	3

Government, Regulations and Laws

BADM 3313	The Law and The Businesses	3
EVSC 2210	Environmental Policies, Laws and Regulations	3
POLS 3050	Ethics, Religion and Politics	3
POLS 3170	International Conflicts	3
POLS 3200	Political Sociology	3
POLS 3700	Women and Their Political Development	3
POLS 3800	Government, Ecology and Public Environmental Public Policy	3
POLS 4110	Constitutional Law	3
SOCI 2080	Criminal Justice System	3

Minor in Governmental Management

The Metropolitan and San German campuses are authorized to offer this minor.

Requirements for the Minor in Governmental Management - 18 credits

Courses for the Minor in Governmental Management

Select 18 credits from the following:

MAEC 2212	Principles of Macroeconomics	3
MAEC 3236	Public Finance and Fiscal Policy	3
MAEC 3330	Economic Development of	3

	Puerto Rico	
POLS 1011	Introduction to Political Science	3
POLS 2040	Government of the United States	3
POLS 2088	Government of the Commonwealth of Puerto Rico	3
POLS 3050	Ethics, Religion and Politics	3
POLS 3200	Political Sociology	3
POLS 3300	Human Rights	3
POLS 3820	Public Administration	3
POLS 4110	Constitutional Law	3
POLS 4300	Public Policy	3
PUAD 3300	Government Accounting	3
PUAD 3510	Public Budget Planning	3

Minor in Human and Civil Rights

The Minor in Human and Civil Rights is designed to provide the basic knowledge in different aspects of Public and Penal Rights for students interested in legal affairs.

The Metropolitan and San Germán campuses are authorized to offer this minor.

Requirements for the Minor in Human and Civil Rights - 18 credits

Courses for the Minor in Human and Civil Rights

Select 18 credits from the following courses:

CJUS 2070	Human and Civil Rights	3
CJUS 3025	Criminal Law	3
CJUS 3045	Rights of The Correctional Population	3
POLS 3300	Human Rights	3
POLS 4110	Constitutional Law	3
POLS 4300	Public Policy	3
SOCI 2080	Criminal Justice System	3

Minor in International Relations

The Metropolitan and San Germán campuses are authorized to offer this minor.

Requirements for the Minor in International Relations - 18 credits

Courses for the Minor in International Relations

Select 18 credits from the following:

GEP-GEHS 3020	Global Society	3
MAEC 3243	International Economics	3
MKTG 4244	Global Marketing	3

POLS 1011	Introduction to Political Science	3
POLS 3080	Political Economy	3
POLS 3150	Introduction to International Relations	3
POLS 3170	International Conflicts	3
POLS 3190	United States Foreign Policy	3
POLS 3501	Political Systems of Latin America	3
POLS 3503	Caribbean Political Systems	3
POLS 3504	Middle East Politics	3
POLS 4033	Inter-American Relations	3
POLS 4100	Contemporary World Politics	3

Minor in Legal Affairs

The Minor in Legal Affairs is designed to provide the basic knowledge in different aspects of the Public and Penal Rights for students interested in legal affairs.

The Metropolitan and San Germán campuses are authorized to offer this minor.

Requirements for the Minor in Legal Affairs - 18 credits

Courses for the Minor in Legal Affairs

Select 18 credits from the following courses:

BADM 3313	The Law and The Businesses	3
CJUS 2070	Human and Civil Rights	3
CJUS 3025	Criminal Law	3
CJUS 3045	Rights of The Correctional Population	3
CJUS 3055	Federal Jurisdiction	3
HPER 3040	Legal Foundations in Sports	3
MUBA 1400	Legal Aspects in The Music Business	3
POLS 3300	Human Rights	3
POLS 4110	Constitutional Law	3
POLS 4300	Public Policy	3
REAL 2600	Legal Principles of Real Estate	3
SOCI 2080	Criminal Justice System	3

Minor in Political Science

The Minor in Political Sciences is designed to provide the basic knowledge in different subjects of political science for those students of other majors that are not of this Bachelor's Degree.

The Metropolitan and San Germán campuses are authorized to offer this minor.

Requirements for the Minor in Political Science - 18 credits

Courses for the Minor in Political Science

Select 18 credits from the following courses:

POLS 1011	Introduction to Political Science	3
POLS 2040	Government of the United States	3
POLS 2088	Government of the Commonwealth of Puerto Rico	3
POLS 2100	Political Analysis and Research Techniques	3
POLS 3050	Ethics, Religion and Politics	3
POLS 3080	Political Economy	3
POLS 3100	Comparative Government and Politics	3
POLS 3150	Introduction to International Relations	3
POLS 3170	International Conflicts	3
POLS 3190	United States Foreign Policy	3
POLS 3200	Political Sociology	3
POLS 3300	Human Rights	3
POLS 3401	Classic Political Thought	3
POLS 3402	Modern Political Thought	3
POLS 3501	Political Systems of Latin America	3
POLS 3502	Contemporary Political Problems in Latin America	3
POLS 3503	Caribbean Political Systems	3
POLS 3504	Middle East Politics	3
POLS 3610	Relations Between the United States and Puerto Rico	3
POLS 3700	Women and Their Political Development	3
POLS 3800	Government, Ecology and Public Environmental Public Policy	3
POLS 3820	Public Administration	3
POLS 3910	Electoral Processes	3
POLS 4033	Inter-American Relations	3
POLS 4055	Public Opinion and Propaganda	3
POLS 4100	Contemporary World Politics	3
POLS 4110	Constitutional Law	3
POLS 4300	Public Policy	3
POLS 4540	Latin American Political Thought	3
POLS 4620	Government and Politics in Developing Areas (A, B, C, D, F, I)	3

Popular Music (A)

The Associate Degree in Music aims to prepare students to face the demanding professional world of popular music; in the areas of the vocal or instrumental performance and the improvisation. This technical preparation is complemented with courses of the history of classic, popular and Puerto Rican music. Likewise, the theoretical courses allow the student to be exposed to the fundamental structures of music as a discipline. The program is designed to develop a competent performer, in his particular level, and in addition, to be aware of his role as an artist within our society. It also offers beginning students, preparatory courses that allow them to obtain the minimum level of performance in their main instrument and in the theoretical foundations of music required to enter the regular program.

The Metropolitan Campus is authorized to offer this Program.

Competencies Profile of Graduates

The program is designed to permit the development of the following competencies:

Knowledge

To demonstrate knowledge and understanding of:

1. the role of music in the context of the national culture and know the relation of our music with the musical manifestations of the world.

2. the theory of music is related to the performance of a musical instrument.

3. the different sources of contemporary pop music in Puerto Rico.

Skills

1. To play the main instrument at an intermediate level, putting emphasis in the styles and the forms of pop music.

2. To compose, arrange and copy music with simple forms using specialized software to write and record music.

3. To improvise on simple forms by means of the application of formulas and elementary strategies for spontaneous creation.

Attitudes

1. To recognize the value of music in its context and appreciate the musical genre of different countries as well as the native ones.

2. To appreciate the contribution of pop music to the culture of a country.

3. To value the importance of the integration of team work to the individual effort for the attainment of the goals.

Admission Requirements

The Program accepts students without prior knowledge of music. The students will be located at a preparatory level. They will pass with a minimum of B, 6 credits of theory and sight singing and 6 credits of the preparatory level of their main instrument.

At the end of July and at the beginning of January, placement tests of theory and sight singing and instrument or voice will be carried out for those students who consider and can demonstrate that they possess the necessary knowledge and skills, in order to be exempted from taking the year of preparatory theory and sol-fa or instrument.

Students who have approved music courses from other accredited university institutions will be evaluated individually by the department director to determine which courses will be validated.

Preparatory Component

MUSIC	0531, 0532	Theory and Sight Singing I and II (2 semesters, 6 credits) Principal Instrument (2 semesters, 2 credits)
MUSIC	0501, 0502	Flute
MUSIC	0511, 0512	Piano
MUSIC	0521, 0522	Puerto Rican Cuatro
MUSIC	0541, 0542	Saxophone
MUSIC	0551, 0552	Trumpet
MUSIC	0571, 0572	Trombone
MUSIC	0581, 0582	Bass
MUSIC	0591, 0592	Guitar
MUSIC	0601, 0602	Drums
MUSIC	0611, 0612	Percussion
MUSIC	0641, 0642	Voice

All students that demonstrate a high level of performance, theoretical knowledge, and skill in sight singing in the entrance examination may receive a total of six credits in their principal instrument. Each case will be evaluated individually by the jury.

Academic Progress Requirements

In order to remain as a student of the Associate Degree in Popular Music the student must meet the following progress requirements:

1. Have a minimum grade of B in the major courses.

2. Pass with a grade of P is required in the courses that are evaluated by a jury (Theory and Sight Singing, Main Instrument).The grade issued by the jury determines the final grade of the class, regardless of the grade of the class and previous tests.

Graduation Requirements

The Associate Degree of Arts in Popular Music will be awarded to the student that fully complied with the requirements established by the University for Associate Degrees and have accumulated a total of 77 academic credits that include:

1. The academic requirements of General Education (24 credits).

2. The academic requirements of the major in Popular Music. (56 credits).

3. Pass with grade of P (Approved) the Graduation Recital.

Requirements for the Associate Degree in Popular Music

General Education Requirements		24 credits
Major Requirements		50 credits
Elective Courses		3 credits
Total		77 credits

General Education Requirements - 24 credits

GESP	Spanish - Select 6 credits from the GESP category	6
GEEN	English - Select 6 credits from the GEEN category	6
GEP-GECF 1010	Introduction to the Christian Faith	3
GEP-GEIC 1010	Information and Computing Technologies	3
GEP-GEMA 1000	Quantitative Reasoning	3
GEP-GEHS 2010	Historical Process of Contemporary Puerto Rico Or	3
GEP-GEEC 2000	Entrepreneurial Culture	3

Major Requirements - 50 credits

MUSIC 1122	Historic Panorama of Music I	3
MUSIC 1123	Historic Panorama of Music II	3
MUSIC 1323	Instrumental Ensemble I	2
MUSIC 1324	Instrumental Ensemble II Or	2
MUSIC 1333	Choral Ensemble I	2
MUSIC 1334	Choral Ensemble II	2
MUSIC 1531	Theory and Sight Singing I	3
MUSIC 1532	Theory and Sight Singing II	3

MUSIC 1563	Group Piano I	2
MUSIC 1564	Group Piano II	2
	Or	
MUSIC 1661	Group Guitar I	2
MUSIC 1662	Group Guitar II	2
MUSIC 2000	Digital Musical Notation	3
MUSIC 2531	Improvisation I	3
MUSIC 2532	Improvisation II	3
MUSIC 2623	Harmony I	3
MUSIC 2624	Harmony II	3
MUSIC 2703	Graduation Concert	3

Principal Instrument - 4 Academic Terms - 12 credits

Students will take 12 credits in performance on their principal instrument from the following courses:

Flute
MUSIC 1501	Flute I	3
MUSIC 1502	Flute II	3
MUSIC 2503	Flute III	3
MUSIC 2504	Flute IV	3

Piano
MUSIC 1511	Piano I	3
MUSIC 1512	Piano II	3
MUSIC 2513	Piano III	3
MUSIC 2514	Piano IV	3

Puerto Rican Cuatro
MUSIC 1521	Puerto Rican Cuatro I	3
MUSIC 1522	Puerto Rican Cuatro II	3
MUSIC 2523	Puerto Rican Cuatro III	3
MUSIC 2524	Puerto Rican Cuatro IV	3

Saxophone
MUSIC 1541	Saxophone I	3
MUSIC 1542	Saxophone II	3
MUSIC 2543	Saxophone III	3
MUSIC 2544	Saxophone IV	3

Trumpet
MUSIC 1551	Trumpet I	3
MUSIC 1552	Trumpet II	3
MUSIC 2553	Trumpet III	3
MUSIC 2554	Trumpet IV	3

Trombone
MUSIC 1571	Trombone I	3
MUSIC 1572	Trombone II	3
MUSIC 2573	Trombone III	3
MUSIC 2574	Trombone IV	3

Bass
MUSIC 1581	Bass I	3
MUSIC 1582	Bass II	3
MUSIC 2583	Bass III	3
MUSIC 2584	Bass IV	3

Guitar
MUSIC 1591	Guitar I	3
MUSIC 1592	Guitar II	3
MUSIC 2593	Guitar III	3
MUSIC 2594	Guitar IV	3

Drums
MUSIC 1601	Drums I	3
MUSIC 1602	Drums II	3
MUSIC 2603	Drums III	3
MUSIC 2604	Drums IV	3

Percussion
MUSIC 1611	Percussion I	3
MUSIC 1612	Percussion II	3
MUSIC 2613	Percussion III	3
MUSIC 2614	Percussion IV	3

Violin
MUSIC 1631	Violin I	3
MUSIC 1632	Violin II	3
MUSIC 2633	Violin III	3
MUSIC 2634	Violin IV	3

Voice (Singing)
MUSIC 1641	Voice I	3
MUSIC 1642	Voice II	3
MUSIC 2643	Voice III	3
MUSIC 2644	Voice IV	3

Viola
MUSIC 1651	Viola I	3
MUSIC 1652	Viola II	3
MUSIC 2653	Viola III	3
MUSIC 2654	Viola IV	3

Cello
MUSIC 1671	Cello I	3
MUSIC 1672	Cello II	3
MUSIC 2673	Cello III	3
MUSIC 2674	Cello IV	3

Popular Music (BA)

Popular Music (BA)

The Bachelor of Arts in Popular Music prepares students to face the demanding professional world of popular music in

the areas of vocal or instrumental performance and improvisation. This technical preparation is complemented with courses in the history of classical, popular and Puerto Rican music for students to develop an inquisitive, analytical and critical attitude towards the art of music in all its expressions. Similarly, theoretical courses allow the student to understand the fundamental structures of music as a discipline of study.

The Program is designed to develop a competent performer in an instrument, at the corresponding level, capable of incorporating technology into his creative process and aware of his role as an artist, both in the local context and in that of a globalized society. It also offers preparatory courses for students who have not studied music and who want to achieve the minimum level of performance in their main instrument as well as in the theoretical foundations required to enter the regular program.

The Metropolitan Campus is authorized to offer this Program.

Competencies Profile of Graduates

The program is designed to permit the development of the following competencies:

Knowledge

1. Describe the role of music in the context of the national culture and the bond between Puerto Rican music with music of the world.

2. Integrate the theory of music and how this is related to the different areas of musical works.

3. Differentiate between the different kinds of contemporary pop music in Puerto Rico.

Skills

1. To perform on the main instrument at an advanced level, in different contexts, making emphasis in the styles and forms of the pop music.

2. To use a suitable software to compose, arrange, record, copy or to write music professionally.

3. To create music in a spontaneous way on complex forms, by means of the application of concepts, strategies and resources for musical improvisation.

Attitudes

1. To evaluate music in its Puerto Rican and international context.

2. To appreciate the contribution of pop music to the culture of a country.

3. To value the importance of the integration of team work to the individual effort for the attainment of the goals.

Admission Requirements

The Program accepts students without knowledge of music. These will take 6 credits of the preparatory level of theory and sight singing and 6 credits of the preparatory level of their main instrument. In addition, they must take the PEG course, Appreciation of music GEPE 3020, along with the preparatory music courses.

At the end of July and beginning of January, theory and sight singing and instrument or voice placement tests will be conducted for those students who can demonstrate the knowledge and skills necessary to be exempted from taking the theory and sight singing preparatory year, of instrument or both.

Students who have approved music courses from other accredited university institutions will be evaluated individually by the department director to determine courses that will be validated.

Preparatory Component

MUSIC	0531, 0532	Theory and Sight Singing I and II (2 semesters, 6 credits) Principal Instrument (2 semesters, 2 credits)
MUSIC	0501, 0502	Flute
MUSIC	0511, 0512	Piano
MUSIC	0521, 0522	Puerto Rican Cuatro
MUSIC	0541, 0542	Saxophone
MUSIC	0551, 0552	Trumpet
MUSIC	0571, 0572	Trombone
MUSIC	0581, 0582	Bass
MUSIC	0591, 0592	Guitar
MUSIC	0601, 0602	Drums
MUSIC	0611, 0612	Percussion
MUSIC	0641, 0642	Voice

Any candidate who demonstrates a high level of performance during the entrance exam will be validated a total of three (3) to six (6) credits in music theory and sight singing and three (3) to six (6) credits in the main instrument.

Retention Requirements

In order to remain as a student of the Bachelor of Arts in Popular Music program the student must meet the following progress requirements:

1. Have a minimum grade of B in the major courses.

2. Approve with a grade of P the courses that are evaluated by a jury: theory and sight singing and main instrument. The grade granted by the jury is the one that determines the final grade of the class, regardless of the class grade or the previous exams.

Requirements for the Bachelor of Arts Degree in

Popular Music

General Education Requirements		48 credits
Major Requirements		78 credits
Elective Courses		3 credits
Total		129 credits

General Education Requirements - 48 credits

Forty-eight (48) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees."

Major Requirements - 78 credits

MUSIC 1122	Historic Panorama of Music I	3
MUSIC 1123	Historic Panorama of Music II	3
MUSIC 1323	Instrumental Ensemble I	2
MUSIC 1324	Instrumental Ensemble II	2
MUSIC 2326	Instrumental Ensemble III	2
MUSIC 2327	Instrumental Ensemble IV	2
	Or	
MUSIC 1333	Choral Ensemble I	2
MUSIC 1334	Choral Ensemble II	2
MUSIC 2335	Choral Ensemble III	2
MUSIC 2336	Choral Ensemble IV	2
MUSIC 1531	Theory and Sight Singing I	3
MUSIC 1532	Theory and Sight Singing II	3
MUSIC 1563	Group Piano I	2
MUSIC 1564	Group Piano II	2
	Or	
MUSIC 1661	Group Guitar I	2
MUSIC 1662	Group Guitar II	2
MUSIC 2000	Digital Musical Notation	3
MUSIC 2531	Improvisation I	3
MUSIC 2532	Improvisation II	3
MUSIC 2533	Improvisation III	3
MUSIC 2623	Harmony I	3
MUSIC 2624	Harmony II	3
MUSIC 2625	Harmony III	3
MUSIC 3901	Composition I	3
MUSIC 4700	Seminar	3
MUSIC 4724	Arrangements I	3
MUSIC 4734	Recording I (M.I.D.I. Room)	3
MUSIC 4803	Graduation Concert	3

Note: Instrumental Ensemble and Choral Ensemble courses may be combined. The total must be eight (8) credits.

Additional 18 credits n the performance of their

principal instrument.

Flute

MUSIC 1501	Flute I	3
MUSIC 1502	Flute II	3
MUSIC 2503	Flute III	3
MUSIC 2504	Flute IV	3
MUSIC 3505	Flute V	3
MUSIC 3506	Flute VI	3

Piano

MUSIC 1511	Piano I	3
MUSIC 1512	Piano II	3
MUSIC 2513	Piano III	3
MUSIC 2514	Piano IV	3
MUSIC 3515	Piano V	3
MUSIC 3516	Piano VI	3

Puerto Rican Cuatro

MUSIC 1521	Puerto Rican Cuatro I	3
MUSIC 1522	Puerto Rican Cuatro II	3
MUSIC 2523	Puerto Rican Cuatro III	3
MUSIC 2524	Puerto Rican Cuatro IV	3
MUSIC 3525	Puerto Rican Cuatro V	3
MUSIC 3526	Puerto Rican Cuatro VI	3

Saxophone

MUSIC 1541	Saxophone I	3
MUSIC 1542	Saxophone II	3
MUSIC 2543	Saxophone III	3
MUSIC 2544	Saxophone IV	3
MUSIC 3545	Saxophone V	3
MUSIC 3546	Saxophone VI	3

Trumpet

MUSIC 1551	Trumpet I	3
MUSIC 1552	Trumpet II	3
MUSIC 2553	Trumpet III	3
MUSIC 2554	Trumpet IV	3
MUSIC 3555	Trumpet V	3
MUSIC 3556	Trumpet VI	3

Trombone

MUSIC 1571	Trombone I	3
MUSIC 1572	Trombone II	3
MUSIC 2573	Trombone III	3
MUSIC 2574	Trombone IV	3
MUSIC 3575	Trombone V	3
MUSIC 3576	Trombone VI	3

Bass

MUSIC 1581	Bass I	3
MUSIC 1582	Bass II	3
MUSIC 2583	Bass III	3

MUSIC 2584	Bass IV	3
MUSIC 3585	Bass V	3
MUSIC 3586	Bass VI	3

Guitar

MUSIC 1591	Guitar I	3
MUSIC 1592	Guitar II	3
MUSIC 2593	Guitar III	3
MUSIC 2594	Guitar IV	3
MUSIC 3595	Guitar V	3
MUSIC 3596	Guitar VI	3

Drums

MUSIC 1601	Drums I	3
MUSIC 1602	Drums II	3
MUSIC 2603	Drums III	3
MUSIC 2604	Drums IV	3
MUSIC 3605	Drums V	3
MUSIC 3606	Drums VI	3

Percussion

MUSIC 1611	Percussion I	3
MUSIC 1612	Percussion II	3
MUSIC 2613	Percussion III	3
MUSIC 2614	Percussion IV	3
MUSIC 3615	Percussion V	3
MUSIC 3616	Percussion VI	3

Violin

MUSIC 1631	Violin I	3
MUSIC 1632	Violin II	3
MUSIC 2633	Violin III	3
MUSIC 2634	Violin IV	3
MUSIC 3635	Violin V	3
MUSIC 3636	Violin VI	3

Voice

MUSIC 1641	Voice I	3
MUSIC 1642	Voice II	3
MUSIC 2643	Voice III	3
MUSIC 2644	Voice IV	3
MUSIC 3645	Voice V	3
MUSIC 3646	Voice VI	3

Viola

MUSIC 1651	Viola I	3
MUSIC 1652	Viola II	3
MUSIC 2653	Viola III	3
MUSIC 2654	Viola IV	3
MUSIC 3655	Viola V	3
MUSIC 3656	Viola VI	3

Cello

| MUSIC 1671 | Cello I | 3 |

MUSIC 1672	Cello II	3
MUSIC 2673	Cello III	3
MUSIC 2674	Cello IV	3
MUSIC 3675	Cello V	3
MUSIC 3676	Cello VI	3

Minor in Anthropology and History of Music

The Minor in Anthropology and History of Music is a complementary academic offering to the Bachelor of Arts in Popular Music. The program studies music from the point of view of human activity and circumstances. It develops the skills of inquiry, reading, writing and the interpretation of human musical acts. It applies the knowledge of investigation, administration and basic organization of documents and musical ethnographic material. The ethnographic-historical study begins with the immediate context of Puerto Rico, the area of the Great Caribbean and the Americas to human musical endeavors as a global phenomenon.

In order to declare this minor, students must have been accepted to the Bachelor of Arts Program in Popular Music and have approved course MUSI 1123 Comparative History of Music II.

The Metropolitan Campus is authorized to offer this minor.

Requirements for the Minor in Anthropology and History of Music - 18 credits

Courses for the Minor in Anthropology and History of Music

MUSIC 2060	Anthropology and History of Music	3
MUSIC 2070	Musical Research Theories and Methods	3
MUSIC 2080	Paradigms in Anthropology and Music History	3
MUSIC 3020	Music and Research: Archives	3
MUSIC 3030	Music and Research: Fieldwork	3
MUSIC 3040	Music and Research: Design and Writing	3

Minor in Contemporary Dance Music

The main purpose of the minor in contemporary dance is to properly prepare students in the technical, historical and methodological aspects of the field of dancing. This preparation is attained with courses of artistic creation and production. The fundamental aim is to train self-promoting students with a holistic preparation who can implement artistic proposals and contribute to the sociocultural development of the country.

The Metropolitan Campus is authorized to offer this minor.

Requirements for the Minor in Contemporary Dance - 21 credits

Courses for the Minor in Contemporary Dance

DANC 2000	Corporal Awareness and Anatomy	3
DANC 2010	Principles and Techniques of Contemporary Dance	3
DANC 2230	History of Contemporary Dance	3
DANC 2240	Dynamics of The Body in the Caribbean Dance	3
DANC 3020	Contemporary Dance Teaching Strategies	3
DANC 3250	Choreographic Principles	3
DANC 3360	Production of the Arts	3

Minor in Performing Arts

The minor in Performing Arts is a complementary academic offering of the Division of Humanistic Studies. The program enriches the theatrical experience that students acquire in the Theater Workshop. It develops research, reflective and interpretative skills. It applies the knowledge acquired in dealing with the dramatic languages and foments the appreciation of the theater as one of the Fine Arts.

In order to declare this minor, it is necessary to have approved an audition to enter the Theater Workshop.

The Metropolitan Campus is authorized to offer this minor.

Requirements for the Minor in Performing Arts - 18 credits

Courses for the Minor in Performing Arts

Students must select 18 credits from the following courses:

THEA 1001	Theater Workshop	2
THEA 1002	Theater Workshop	2
THEA 1500	Acting	3
THEA 1700	Appreciation of The Theater	3
THEA 2001	Theater Workshop	2
THEA 2002	Theater Workshop	2
THEA 2500	Puppet Theater	3
THEA 3001	Theater Workshop	2
THEA 3002	Theater Workshop	2
THEA 3505	Puerto Rican Theater	3
THEA 4001	Theater Workshop	2

THEA 4002	Theater Workshop	2
THEA 4013	Stage Direction and Theatrical Staging	3
THEA 4500	Stagecraft	3

Minor in Sacred Music

The Minor in Sacred Music offers students training in musical theory as well as in musical techniques. It exposes students to the hermeneutic and liturgical study of sacred music as well as to its historical and contextual study. In addition, it allows them to perform as musicians in churches, to be developed in the area of religious music and to form instrumental or vocal groups in churches.

In order to declare the minor in Sacred Music the approval of the Academic Adviser and of the Director of the Department of Popular Music is required, and passing the preparatory courses of Theory and Sight Reading I and II is required before continuing with the remaining courses of the minor.

The Metropolitan Campus is authorized to offer this minor.

Requirements for the Minor in Sacred Music - 21 credits

Courses for the Minor in Sacred Music

MUSIC 531	Theory and Sight Singing I	3
MUSIC 532	Theory and Sight Singing II	3
MUSIC 1126	Christian Music History	2
MUSIC 2020	Liturgical Function of Music	2
MUSIC 2030	Choral Directing and Management	3
	Or	
MUSIC 2040	Instrumental Directing and Management	3
MUSIC 2050	Sacred Music Ensemble	2

Six credits selected from the following courses:*

MUSIC 511	Preparatory Piano I	3
MUSIC 591	Preparatory Guitar I	3
MUSIC 641	Preparatory Voice I	3

Students will take 6 credits in the courses from the component of Preparatory Music where they will take an instrument: piano or guitar and voice. Students whose major is Popular Music and their main instrument is piano or guitar, must take the course of the instrument that is not theirs. Those students whose preparation is in Voice will take Piano and Guitar.

Psychology (BA)

Psychology (BA)

The Program of studies for the Bachelor of Arts Degree in Psychology is designed to provide the student with the basic knowledge and skills needed to make a start in the study of psychology. The curriculum has a particular emphasis on developing the student's capacity for critical judgment and for professional ethical values. In addition, it emphasizes the acquisition of scientific research skills, cultural diversity and dealing with relationships at the intrapersonal and interpersonal levels.

The Aguadilla, Arecibo, Fajardo, Metropolitan and San Germán campuses are authorized to offer this Program. The Metropolitan Campus' University Center in Caguas is also authorized to offer this Program. The Ponce Campus and the Metropolitan Campus' University Center in Caguas are authorized to offer this Program through online education.

Competencies Profile of Graduates

This Program is designed to develop the competencies that will enable students to:

Knowledge

Knowledge and understanding of:

1. The main theories and currents of psychological thought, the historical background as a science and contemporary trends.

2. The principle methods of research used in behavioral sciences.

3. The main ethical aspects that govern psychology as a profession.

4. The biological bases that form part of human behavior.

5. The sociocultural factors that affect psychological behavior.

6. The applicability of the realities and the mental health services in the field of psychology in Puerto Rico and the contemporary trends.

Skills

1. Assume positions and offer their analytical and critical judgment.

2. Apply and integrate the theory and basic practice skills required at the bachelor's level.

3. Apply the principles of scientific research in psychology.

4. Communicate with effectiveness in both oral and written form.

Attitudes

1. Incorporate in their professional life the respect and esteem for human diversity.

2. Apply the ethical principles of the discipline in the exercise of their profession.

3. Establish interpersonal relations that foment collaborative work in their work environment.

4. Demonstrate commitment with the discipline by means of participation in activities related to this, such as symposiums, congresses, workshops and by belonging to organizations that represent them.

Requirements for the Bachelor of Arts Degree in Psychology

General Education Requirements	48 credits
Major Requirements	57 credits
Prescribed Distributive Requirements	9-10 credits
Elective Courses	6 credits
Total	120-121 credits

General Education Requirements - 48 credits

Forty-eight (48) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees."

Major Requirements - 57 credits

PSYC 1051	General Psychology I	3
PSYC 1052	General Psychology II	3
PSYC 2001	Writing in Psychology	3
PSYC 2010	Developmental Psychology	4
PSYC 3001	Statistical Methods I	3
PSYC 3002	Statistical Methods II	3
PSYC 3100	Learning	3
PSYC 3113	Physiological Psychology	3
PSYC 3300	Social Psychology	3
PSYC 4000	Fundamentals of The Psychological Interview	3
PSYC 4103	Community Psychology	3
PSYC 4200	Principles of Psychological	3
	Testing	
PSYC 4213	Psychopathology	3
PSYC 4234	Psychology of Personality	3
PSYC 4600	Experimental Psychology	4
PSYC 4971	Integration Seminar	3
ANTH 2030	Social Anthropology	3
BIOL 1006	Fundamentals of Biology	4

Prescribed Distributive Requirements - 9-10 credits

Select nine or ten credits from the following courses:

PSYC 3144	Motivation and Emotion	3
PSYC 3268	Introduction to Counseling and Psychotherapy	3
PSYC 3313	Introduction to Industrial-Organizational Psychology	3
PSYC 3315	Introduction to School Psychology	3
PSYC 397_	Special Topics	3
PSYC 4100	Behavior Modification	3
PSYC 4113	Contemporary Theories	3
PSYC 4210	Cognitive Psychology	3
PSYC 4300	Group Processes	3
PSYC 4520	Crisis Intervention	3
PSYC 4910	Experience in Psychology Scenarios	3
CJUS 4500	Social-Scientific Research Methodology	4

Minor in Community Psychology

This minor aims to prepare students with the basic tools to work in communities, through courses in areas such as social psychology, community psychology, crisis intervention, community project management, and group dynamics.

The Aguadilla and San Germán campuses are authorized to offer this minor.

Requirements for the Minor in Community Psychology - 21 credits

Courses for the Minor in Community Psychology

PSYC 1051	General Psychology I	3
PSYC 2001	Writing in Psychology	3
PSYC 3300	Social Psychology	3
PSYC 4000	Fundamentals of The Psychological Interview	3
PSYC 4103	Community Psychology	3
PSYC 4300	Group Processes	3
SOCI 4870	Management of Communitarian Projects	3

Minor in General Psychology

This minor aims to prepare students with courses in psychology that generally are required to for admission to graduate studies in psychology in and outside of Puerto Rico. It also provides for students from other academic programs to take psychology courses for career enhancement.

The Aguadilla and San Germán campuses are authorized to offer this minor.

Requirements for the Minor in General Psychology - 25 to 26 credits

Courses for the Minor in General Psychology

PSYC 1051	General Psychology I	3
PSYC 1052	General Psychology II	3
PSYC 2010	Developmental Psychology	4
PSYC 3001	Statistical Methods I	3
PSYC 3002	Statistical Methods II	3
PSYC 4600	Experimental Psychology	4

Choose (two) 2 of the following course:

PSYC 3113	Physiological Psychology	3
PSYC 3300	Social Psychology	3
PSYC 4213	Psychopathology	3
PSYC 4234	Psychology of Personality	3
BIOL 1006	Fundamentals of Biology	4

Minor in Intervention and Stabilization of Clients in Crisis Situations

The Minor in Intervention and Stabilization of Clients in Crisis Situations aims to strengthen the knowledge and the skills in the students that they need to perform better their role as care suppliers in this type of situation.

The Aguadilla and San Germán campuses are authorized to offer this minor.

Requirements for the Minor in Intervention and Stabilization of Clients in Crisis Situations - 21 credits

This minor concentration requires six credits in Psychology courses in addition to the established courses. These additional courses must be selected in collaboration with the academic advisor, taking into consideration the interests of the student.

Courses for the Minor in Intervention and Stabilization of Clients in Crisis Situations

PSYC 1051	General Psychology I	3
PSYC 2010	Developmental Psychology	4

PSYC 3144	Motivation and Emotion	3
PSYC 4000	Fundamentals of The Psychological Interview	3
PSYC 4520	Crisis Intervention	3

Minor in Psychology

The Minor in Psychology allows students from other disciplines the opportunity to expose themselves to the main theoretical foundations of psychology as a science of behavior.

The Ponce Campus is authorized to offer this minor through online education. The Fajardo Campus is authorized to offer this minor in-campus.

Requirements for the Minor in Psychology - 22 to 23 credits

Courses for the Minor in Psychology

PSYC 1051	General Psychology I	3
PSYC 1052	General Psychology II	3
PSYC 2010	Developmental Psychology	4
PSYC 4234	Psychology of Personality	3

Note: Choose for nine or ten credits in the PSYC category that will be selected in coordination with the academic advisor taking into consideration the student's interests.

Minor in Psychology and Labor Affairs

This lower concentration aims for students to handle the basic tools related to psychological dynamics in the work environment, group behavior and the influences of the social sphere on individual behavior.

The Aguadilla and San Germán campuses are authorized to offer this minor.

Requirements for the Minor in Psychology and Labor Affairs - 21 credits

Courses for the Minor in Psychology and Labor Affairs

PSYC 1051	General Psychology I	3
PSYC 3144	Motivation and Emotion	3
PSYC 3300	Social Psychology	3
PSYC 3313	Introduction to Industrial-Organizational Psychology	3
PSYC 4000	Fundamentals of The Psychological Interview	3
PSYC 4300	Group Processes	3
PSYC 4520	Crisis Intervention	3

Minor in Psychology and Mental Health

This minor aims to prepare students in the areas of psychopathology, crisis intervention, interviews, and psychological counseling within the field of mental health.

The Aguadilla and San Germán campuses are authorized to offer this minor.

Requirements for the Minor in Psychology and Mental Health - 24 credits

Courses for the Minor in Psychology and Mental Health

PSYC 1051	General Psychology I	3
PSYC 1052	General Psychology II	3
PSYC 2010	Developmental Psychology	4
PSYC 3268	Introduction to Counseling and Psychotherapy	3
PSYC 4000	Fundamentals of The Psychological Interview	3
PSYC 4100	Behavior Modification	3
PSYC 4213	Psychopathology	3
PSYC 4520	Crisis Intervention	3

Minor in School Psychology

These minor aims to familiarize students with the tests offered by psychologists as part of the assessment batteries used in the school environment and with the theories of human development.

The Aguadilla and San Germán campuses are authorized to offer this minor.

Students of the Bachelor of Arts in Psychology program who aspire to complete this minor must select prescribed distributive courses that are required in their baccalaureate that are different from the courses required in this minor.

Requirements for the Minor in School Psychology - 24 - 25 credits

Courses for the Minor in School Psychology

PSYC 1051	General Psychology I	3
PSYC 1052	General Psychology II	3
PSYC 2010	Developmental Psychology Or	4
EDUC 2031	Developmental Psychology	3
PSYC 3001	Statistical Methods I	3
PSYC 3100	Learning	3
PSYC 3315	Introduction to School Psychology	3

PSYC 4100	Behavior Modification	3
PSYC 4200	Principles of Psychological Testing	3

Radiological Science in Computerized Tomography and Magnetic Resonance (BS)

Radiological Science in Computerized Tomography and Magnetic Resonance (BS)

The Bachelor of Science in Radiological Sciences offers a comprehensive educational program for students who have an Associate Degree in Radiological Technology and for certified radiological technologists. The main purpose of the Program is the development of clinical competence in advanced modalities of diagnostic images: Computerized Tomography and Magnetic Resonance.

The Program is designed to allow the student to develop personally and professionally through participation in a variety of didactic and clinical learning experiences. These include cognitive, psychomotor and affective components with scientific knowledge based on concepts and principles of the natural and social sciences, and the humanities; in addition to other sciences related to the discipline.

As a health related science, radiological science is deals with patient health and well-being through diagnosis and treatment of diseases by means of the creation of medical images using X-rays, ultrasound and nuclear magnetic resonance. The specialists in diagnostic images work in collaboration with radiologists and other medical specialists.

It is expected that graduates of this Program be prepared to work in different scenarios such as: general and specialized hospitals, medical, offices, specialized clinics, educational institutions, public health institutions, companies dealing in medical equipment, in industry, and others.

The Aguadilla, Barranquitas, Ponce and San Germán campuses are authorized to offer this Program.

Admission Requirements

1. Submit evidence of having completed the graduation requirements for the Associate Degree in Radiological Technology in a properly certified institution.

2. Have a minimum average of 2.50.

3. Meet the established norms of admission in the General Catalog of Inter American University of Puerto Rico.

4. Present an effective copy of the following documents:

   a. Certificate of Health.

   b. Certificate of Immunization against Hepatitis B and Chickenpox.

   c. Negative Certificate of Criminal Records submitted by the Police of Puerto Rico (not more than six months old).

   d. Certificate of Cardiovascular Resuscitation (CPR).

   e. Evidence of a HIPPA course.

5. In addition to the indicated admission requirements, the candidates who come from other institutions will be evaluated in relation to the curricular program of origin to determine the courses they must take.

Retention Requirements

1. Meet the satisfactory academic progress norms established in the General Catalog of Inter American University.

2. Pass all major courses with minimum grade of C. The courses of clinical practice must be approved with a minimum grade of B.

3. Students who attempt and fail the same major course in two occasions will be put under a probationary period in the Bachelor's program of X-ray Sciences with a major in Computerized Tomography and Magnetic Resonance. If the student fails during the probationary period in the same course, he will be dropped from the program, but he may choose to request admission to another major.

4. Once the student is assigned to a clinical center, he must attend this as programmed by the professor and the coordinator of the Program.

Graduation Requirements

1. Meet the graduation requirements established in Inter American University's General Catalog.

2. Pass all major courses with a minimum grade of C. The clinical practice courses must be approved with a minimum grade of B.

3. To obtain the Bachelor's degree in Radiological Sciences with a major in Computerized Tomography and Magnetic Resonance, the student must complete the degree with a minimum general academic index of 2.50.

Requirements for the Bachelor of Science Degree in Radiological Sciences with a Major in Computerized Tomography and Magnetic Resonance

Associate Degree Requirements in Radiological Technology	78 credits
General Education Requirements at the Bachelor's Level	21 credits
Major Requirement	30 credits
Total	129 credits

General Education Requirements - 21 credits

In order to receive the Bachelor of Science Degree in Radiological Sciences, students must take 21 credits in General Education in addition to the 24 credits approved for the Associate Degree. These 21 credits will be taken as follows:

- in the Philosophical and Esthetic Thought category, course GEPE 4040 and a course from among 3010, 3020 or 3030;

- in the Basic Skills in Spanish category, course GESP 2203;

- in the Basic Skills in English category, one of the following courses: GEEN 1103, GEEN 1203 or GEEN 2313;

- in the Scientific and Technological Context category, one of the following courses: GEST 2020 or GEST 2030;

- in the Historical and Social Context category, one of the following courses: GEHS 3020, GEHS 4020 or GEHS,

- GEHS 2010 or GEEC 2000, depending on which one was approved in the Associate Degree.

Students in this program are exempted from taking the GEHP 3000 course.

The approval of the Associate in Radiological Technology is required for admission to the Bachelor of Radiological Sciences in Computed Tomography and Magnetic

Resonance Imaging

Major Requirements - 30 credits

CTMR 3020	Physics of Computerized Tomography	3
CTMR 3025	Physics of Magnetic Resonance	3
CTMR 3000	Introduction to Computerized Tomography and Magnetic Resonance	2
CTMR 3010	Sectional Anatomy and Pathophysiology	4
CTMR 3050	Procedures and Pathology in The Images of Computerized Tomography	4
CTMR 3060	Procedures and Pathology in The Images of Magnetic Resonance	4
CTMR 4910	Clinical Practice in Computerized Tomography	4
CTMR 4920	Clinical Practice in Magnetic Resonance	4
CTMR 4030	Integration Seminar	2

Minor in Science in Skeletal Muscle Sonography

Requirements for the Minor in Science in Skeletal Muscle Sonography - 18 credits

Courses for the Minor in Science in Skeletal Muscle Sonography

This minor requires that students be admitted to the Bachelor of Science in Radiological Sciences with a major in Computerized Tomography and Magnetic Resonance of the Ponce Campus. The Ponce Campus is authorized to offer this Minor.

SONO 3005	Anatomy and Pathophysiology MSK	3
SONO 3010	Ultrasound Physics I	3
SONO 3011	Sonography MSK in the Upper Extremities	3
SONO 3012	Sonography MSK in the Lower Extremities	3
CTMR 4010	Computerized Tomography MSK	3
CTMR 4011	Magnetic Resonance MSK	3

Radiological Technology (AAS)

The Associate Degree in Applied Sciences in Radiological Technology (AAS) seeks the training and preparation of a health professional responsible for administering doses of ionizing radiation for diagnostic, treatment or research purposes. The development of a radiological technologist with the highest level of clinical competence and responsibility regarding the acquisition of radiographic image, quality control and patient care in a radiological center is promoted. It promotes the development of skills to solve problems and think critically. Promotes oral and written communication skills according to the needs of different types of patients. Integrates and applies the principles of radiological and occupational safety in the Radiology department.

The mission of the Associate Degree in Applied Science Program in Radiological Technology has its roots in the mission of Inter American University of Puerto Rico.

This mission is achieved through the following goals:

1. To develop an academic program that responds to student needs and those of the society the Program serves.

2. To develop a curriculum in harmony with the practice standards established by the regulating agencies of the discipline.

3. To provide students with the knowledge and necessary educational experiences that will permit them to pass the revalidation examination.

4. To prepare professionals to be members of an interdisciplinary health team that will carry out its functions in a safe, effective and competent manner.

5. To promote learning as a continuous process so that these professionals keep updated in their field of specialty once they enter the world of work.

The Aguadilla, Barranquitas, Ponce and San Germán programs are recognized by the American Registry of Radiologic Technology (ARRT), which allows the student to aspire to the revalidation of the United States.

The programs of the Ponce and San Germán campuses are accredited and certified by the national accrediting board, Joint Review Committee on Education in Radiologic Technology (JRCERT).

The Aguadilla, Barranquitas, Fajardo, Ponce, and San Germán campuses are authorized to offer this Program.

Program objectives

1. Develop critical thinking and problem-solving skills in your practice as clinically competent radiologic

technologists.

2. Establish an assessment plan to ensure compliance with the goals and objectives of the program.

3. Maintain an academic curriculum in line with the current demands of the discipline.

4. Develop the necessary skills to perform their duties and responsibilities within the standards of practice established for their profession.

5. Develop in students the ability to perform as an active member within the interdisciplinary health team attending the needs of the patient.

6. Promote professional values and attributes to maintain a high level of ethical behavior with patients, employees, colleagues and other members of the interdisciplinary health team.

7. Develop competent professionals in the realization and evaluation of radiographic diagnostic images.

8. Foster in the student the commitment to continuous professional development.

Several institutions providing health services in Puerto Rico participate as affiliates in clinical instruction. In keeping with the availability of physical facilities and resources to serve students, each campus authorized to offer the program determines the maximum number of students to be admitted per year.

Competencies Profile of Graduates

The Program is designed to develop the skills that allow the student:

Knowledge

Demonstrate knowledge and understanding of:

1. the evaluation criteria and radiographic quality for all procedures related to the different anatomical parts of the body according to radiography.

2. radiation safety and security measures while executing radiographic procedures.

3. the appropriate medical terminology when communicating any type of information related to the status or condition of the patients.

4. the fundamentals and standards of the profession.

Skills

1. Demonstrate critical thinking skills and problem solving within the professional performance.

2. Demonstrate effective oral and written communication skills with the patient, family, colleagues and other members of the health team.

3. Employ effective skills in the management and care of outpatients and hospitalized before, during and at the end of the radiographic intervention.

4. Perform radiographic procedures in accordance with the standards of practice established by the profession.

5. Effectively use emerging technology in the discipline and work area.

6. Interpret medical orders when executing any intervention with patients.

Attitudes

1. Show cordial and professional relationships with members of the interdisciplinary health team, patients and family members.

2. Demonstrate professional, empathic and ethical conduct with patients, radiology staff, the interdisciplinary health team and the general public.

3. Exhibit responsibility for the professional and personal growth through continuing education, participation in professional organizations and the study of all literature related to their specialty.

Admission Requirements

Students aspiring to the Associate Degree in Applied Science in Radiological Technology must meet the following specific requirements for admission to the Program:

1. Be admitted to Inter-American University of Puerto Rico, in a campus authorized to offer the Program.

2. Submit a completed admission application on or before the date stipulated by the Program.

3. Present an official and updated transcript of recent studies.

4. Have a general grade point average of at least 2.50.

Admission Procedure

1. The transcript of courses taken and credits will be

evaluated.

2. The absolute value of the general grade index (GPA) will be considered from 2.50 in a scale of 4.0.

3. Each course taken will be assigned a value in accordance with its credit value. The assigned value will be multiplied by the numerical value of the grade obtained (A = 4 points, B = 3 points, C = 2 points).

4. High school students:
The scores of the completed courses will be added (Biology, Chemistry, Physics and Introduction to Computers), the total is divided by the total of credits taken and this total is multiplied by the number of courses for a total of from 0 to 16 points. (Total points ÷ total of credits = ___ total x of taken courses (maximum 4) = __).

   a. Present evidence of the results of the PAA test. Points will be awarded in the sections of Mathematics and English based on the score obtained in each part, as described below:

   • English: 440-540 = 2 points; 541-640 = 3 points; 641 and higher = 4 points.

   • Mathematics: 440-520 = 2 points; 521-600 = 3 points; 601 and higher = 4 points.

University students:
The scores of the completed courses or their equivalent will be added (Basic Concepts of Biology, Human Anatomy and Physiology, Intermediate Algebra, Psychology, Introduction to Computers and English) and divided by the total of credits taken and multiplied by the total number of courses (maximum of 6) up to a total of 24 points (Total points ÷ total credits = _ _ total x of courses taken (maximum of 6) = ____).

5. One point (1) will be granted for attendance at the Program orientation.

6. One point (1) will be granted if the applicant has experience in health related professions.

7. A two point (2) bonus will be granted if it is second-time application.

The total of points will be added for the final maximum score of 30 points.
The applicants will be ordered in descending order from the highest to the lowest score and those with the highest scores will be selected. The maximum number of students per year will be determined based on the facilities and resources available to take care of them.

8. The candidates will be informed of the decision of the Admissions Committee.

After admission, students must present:

   • Two (2) photos 2 x 2.

   • A health certificate.

   • Evidence of vaccination against Hepatitis B, Chickenpox and Influenza.

   • A certificate of no criminal record.

   • Up-to-date evidence of CPR.

   • Negative Certificate of No Sex Offender.

   • Particle Aspiration Test (N95).

   • HIPAA Law Certificate.

   • Negative doping (5 tests).

Each of these evidences must be presented before starting the second semester of the first year of the program and must be valid for 6 months at the beginning of each semester. This applies to every student assigned to the program.

The student is responsible for complying with any other requirement so requested or required by the agencies or clinical affiliations that serve as practice centers for the Program.

Similarly, the student must comply with those requirements, not academic, related to the fulfillment of the essential functions of the discipline. These appear in section 504 of the Vocational Rehabilitation Act of 1973. Therefore, given the work requirements and functions of the radiologic technologist, the student should know that he will occasionally have to lift and move heavy objects. All students with a history of physical limitations are advised to consult their physician before enrolling in the Program courses.

List of Essential Functions of the Radiological Technologist

Radiological Technology is a profession that requires students to demonstrate the ability to perform the functions listed below in a safe, reliable and efficient manner.

1. Ability to stand and walk for 80% of the clinical time.

2. Ability to help, lift and position patients for at least 80% of the clinical time.

3. Verbal and written skills sufficient to respond promptly in communications with patients, co-workers and doctors.

4. Enough vision to observe the patient's condition while behind the control panel and to evaluate the images. Verbal skills to instruct the patient while performing the tasks of a radiologic technologist.

5. Enough hearing to respond to the patient's needs and interact with the patient, as well as to respond to the audible sound of the equipment.

6. Enough motor skills to respond to medical emergencies and manipulate the equipment. These motor skills may include, among others, the following:

   a. extend your hands and arms in any direction.

   b. grab, hold, turn, and work with both hands.

   c. choose, pinch or work with fingers.

   d. move hand and foot in a coordinated manner with each other according to visual stimuli.

   e. lift, load, pull and/or frequently push objects weighing 50 lbs. or more.

7. Intellectual, ethical and emotional skills to exercise discretion.

8. Cognitive ability to perceive threats and environmental tensions and ability to handle these situations:

   a. continue to function safely and effectively during periods of high stress.

   b. ability to protect yourself and others from potential dangers in the health care environment; infectious diseases, contaminated equipment, sharp objects (especially needles), chemical gases and radiation.

Disability Law Statement: The Inter American University of Puerto Rico complies with all provisions of the Americans with Disabilities Act and makes reasonable accommodations at the request of qualified individuals.

Retention Requirements

1. Meet the academic progress norms established in Inter American University's General Catalog.

2. Approve GEMA 1200 from the General Education Program and all major courses with a minimum grade of C.

3. The student will attend the clinical affiliation as programmed by the Program Office.

4. All students who do not satisfactorily approve one major course in a semester will be placed on a probationary period in the program. If a student fails the same course during the probationary period, he will be dropped from the Program.

5. The student who is suspended for academic deficiency and/or punishable conduct may not be re-admitted to the Program. This applies to both the academic and clinical components.

6. Three (3) or more days of absence during the semester in a course of clinical practice, without a reasonable justification, will result in the student being dropped from the course.

Internal and External Transfer Requirements

1. Comply with all admission norms for transfer students established in the General Catalog and in that of the corresponding Campus.

2. The Director of the Program or the Director's authorized representative will evaluate the file and determine the equivalences.

3. Students, who fail, obtain UW in major courses or withdraw from the Program before completing the degree, have a maximum of two academic semesters to register in the current study program, in harmony with its capacity to receive more students. Those students, who do not take major courses during this period, must apply again for admission to the Program.

4. Direct internal or external transfers to courses RATE are not permitted. For this, an application for space or admission to the program must be made. Major courses will not be authorized in combined registration.

Graduation Requirements

1. Meet all the graduation norms and requirements for the Associate in Applied Science Degree established in the General Catalog.

2. To obtain the Associate of Applied Sciences Degree in Radiological Technology, the student must complete the degree with a minimum academic grade point index of 2.50.

Requirements for the Associate of Applied Science Degree in Radiologic Technology

General Education Requirements	24 credits
Major Requirements	51 credits
Related Course Requirements	3 credits
Total	78 credits

General Education Requirements - 24 credits

GESP	Spanish - Select 6 credits from the GESP category	6
GEEN	English - Select 6 credits from the GEEN category	6
GEP-GECF 1010	Introduction to the Christian Faith	3
GEP-GEIC 1010	Information and Computing Technologies	3
GEP-GEMA 1200	Fundamentals of Algebra	3
GEP-GEHS 2010	Historical Process of Contemporary Puerto Rico Or	3
GEP-GEEC 2000	Entrepreneurial Culture	3

Major Requirements - 51 credits

RATE 1110	Patient Care	2
RATE 1125	Introduction to Radiological Technology and Ethical Concepts	2
RATE 1130	Radiation Protection	3
RATE 1141	Biology and Radiographic Anatomy I	3
RATE 1142	Biology and Radiographic Anatomy II	3
RATE 1221	Radiographic Procedures and Evaluation I	2
RATE 1230	Principles of Radiographic Exposure And Processing	3
RATE 2090	Pharmacology and Venipuncture	3

RATE 2210	Critique and Radiographic Quality Control	3
RATE 2222	Radiographic Evaluation and Procedures II	2
RATE 2223	Radiographic Evaluation and Procedures III	2
RATE 2231	Radiological Physics I	3
RATE 2232	Radiological Physics II	3
RATE 2240	Radiographic Pathology and Medical Terminology	3
RATE 2260	Radiobiology	2
RATE 2270	Diagnostic Image Modalities and Equipment	2
RATE 2910	Clinical Practice I	1
RATE 2912	Clinical Practice II	3
RATE 2913	Clinical Practice III	3
RATE 2919	Clinical Practice IV	3

Related Course Requirements - 3 credits

GEP-GEHS 3050	Human Formation, Society, and Culture	3

Radiological Technology (BS)

Radiological Technology in Mammography and Angiography (BS)

This Program is designed develop students academically in the areas of radiological imaging and provides students the option of obtaining a diploma of Associate Degree in Applied Sciences in Radiological Technology upon completing the 78 required credits for the major. In addition, it aims to offer professionals who have obtained an Associate Degree in Radiological Technology from an accredited university, the opportunity to continue studies leading to the Bachelor of Science Degree in Radiological Technology with a major in Mammography and Angiography. The practice courses will be offered in different structured scenarios in affiliated and certified health institutions where the student will develop the required knowledge, skills and competencies to offer a quality service.

The Program aims to prepare health professionals capable of applying the knowledge of the components of mammography and angiography equipment to the identification of the diverse pathologies related to the study area. This professional will be able to make structured radiological studies in the areas of mammography and angiography that facilitate the analysis and interpretation of the results so that patient diagnoses can be made with a greater degree of precision. In addition, they will demonstrate a respectful attitude towards the patient by observing the professional ethics code and the

Confidentiality Law (HIPAA).

Graduates from the Program will have a high sense of humanism, sensitivity and commitment to the profession, and will possess traits that will be shown by means of their effective work with the health team that intervenes in the diagnosis and treatment of diseases.

The Radiological Diagnosis Technology profession requires a license granted by the Examining Board of Radiology Technicians, after satisfactory approval of a revalidation examination. As a result of the formative process of the graduates of the Program, they will be capable of taking and to approving the evaluation required to exercise the profession.

The Aguadilla, Barranquitas and Fajardo campuses are authorized to offer this Program.

Competencies Profile of Graduates

The Program is designed to develop the competencies that will enable students to:

Knowledge

Demonstrate knowledge and understanding of:

1. the basic aspects of legislation, duties, responsibilities, professional ethics, historical evolution and radiological safety.

2. basic concepts of biology, histology, anatomy and physiology of the main systems of the human body.

3. procedures, the radiographic techniques, the indications and the contraindications of radiographic studies by means of the use of contrasting agents.

4. the essential components of the production of X-rays and the use of the different radiographic equipment.

5. the basic concepts of pharmacology and the administration of contrast agents and intravenous medicines.

6. the basic principles of physics applicable to the science of radiation.

7. the basic concepts of pathological conditions and the corresponding terminology.

8. the biological effects, the description of the action mechanism and the short and long term effects of ionizing radiation.

9. the new modalities of diagnosis by means of the

different forms of images produced by the different equipment, such as in mammography and angiography.

10. the regulations of the Mammography Quality Standards Act (MQSA) for the interpretation of the norm that is to be used for quality control of the image and its procedures.

Skills

1. Prepare the patient's file by means of the use of the appropriate medical terminology.

2. Apply the radiological procedures in harmony with the established standards of practice for each specialization.

3. Perform the developing of radiographic films in an effectively and safe manner.

4. Identify the methods of radiological safety located in the radiographic room.

5. Determine the suitable radiographic reviewer for each procedure.

6. Manipulate the contrast means used in the specialized studies as the law establishes.

7. Use the skills of effective communication with patients, relatives, colleagues and other members of the interdisciplinary health team.

8. Demonstrate skills to obtain data for research by using technology.

Attitudes

1. Demonstrate commitment with their professional development through your participation in activities of continuing education and professional organizations.

2. Demonstrate compassion towards the patient.

3. Demonstrate a professional and ethical conduct.

4. Recognize the importance of offering care to the patient of the highest quality when carrying out the procedures of mammography and angiography.

Admission Requirements

Students who aspire to the Bachelor of Science Degree in Radiological Technology with a major in Mammography and Angiography must fulfill the following general

admission requirements of the Program:

1. Submit a completed admissions application in or before the date stipulated by the Program and declare the major in Bachelor of Science in Radiological Technology in Mammography and Angiography..

2. Present an official and updated transcript of credits of recent studies.

3. Have a general grade index of 2.50 more.

4. Submit two (2) letters of recommendation from professors who know you as a student.

5. In addition to complying with the admission requirements established in the General Catalog of the Inter-American University of Puerto Rico, the student must present a valid copy of the following documents:

- Health certificate

- Certificate of Immunization against Hepatitis B and Varicella

- Negative Criminal Record Certificate issued by the Puerto Rico Police

- Certified CPR, HIPAA, OSHA

In addition to the admission requirements indicated, candidates from other institutions will be evaluated in relation to the curricular program of origin and the necessary adjustment to the courses to be taken.

Retention Requirements

1. Approve all major courses with a minimum grade of C.

2. Any student who does not satisfactorily approve the same major course on two occasions, will be subjected to a probationary period in the BS in Radiological Technology. If the student fail, during the probationary period in the same course, the student will not be able to continue in the program.

3. The student will attend clinical affiliation, as scheduled by the program leadership.

4. To remain in the program, the student must maintain a minimum GPA of 2.25

Transfer Requirements

1. Meet all admission requirements for students

transferring from another University campus or transfers established in the University's General Catalog and by the corresponding Campus.

2. The program's chair or a duly authorized specialist, will evaluate the file and submit the recommendations for the corresponding course equivalences to the admissions office.

3. Have a minimum average of 2.50 in the major courses and have an Associate Degree in Radiological Technology from a recognized and accredited Higher Education institution. If more than five (5) years have passed since finishing the Associate Degree, an active license, as Radiological Technologist must be presented.

4. Transfers require an admission process. Major courses will not be authorized in combined enrollment.

Graduation Requirements

To complete the Bachelor of Science Degree in Radiological Technology with a major in Mammography and Angiography the student must:

1. Have approved all major courses with a minimum average of 2.50.

2. Have obtained a minimum grade point average of 2.00 points.

Requirements for the Bachelor of Science Degree in Radiological Technology with a Major in Mammography and Angiography

General Education Requirements	45 credits
Major Requirements	71 credits
Related Course Requirements	3 credits
Elective Courses	3 credits
Total	122 credits

General Education Requirements - 45 credits

Forty-five (45) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees." Students of this Program will take GEMA 1200 in the Basic Skills in Mathematics category. They are exempt from taking the course GEHP 3000.

Major Requirements - 71 credits

RATE 1110	Patient Care	2
RATE 1125	Introduction to Radiological	2

	Technology and Ethical Concepts	
RATE 1130	Radiation Protection	3
RATE 1141	Biology and Radiographic Anatomy I	3
RATE 1142	Biology and Radiographic Anatomy II	3
RATE 1221	Radiographic Procedures and Evaluation I	2
RATE 1230	Principles of Radiographic Exposure And Processing	3
RATE 2090	Pharmacology and Venipuncture	3
RATE 2210	Critique and Radiographic Quality Control	3
RATE 2222	Radiographic Evaluation and Procedures II	2
RATE 2223	Radiographic Evaluation and Procedures III	2
RATE 2231	Radiological Physics I	3
RATE 2232	Radiological Physics II	3
RATE 2240	Radiographic Pathology and Medical Terminology	3
RATE 2260	Radiobiology	2
RATE 2270	Diagnostic Image Modalities and Equipment	2
RATE 2910	Clinical Practice I	1
RATE 2912	Clinical Practice II	3
RATE 2913	Clinical Practice III	3
RATE 2919	Clinical Practice IV	3
RATE 3050	Mammographic Quality Control	3
RATE 3071	Breast Anatomy and Vascular Pathology	3
RATE 3080	Radiographic Procedures and Evaluation of the Breast	3
RATE 3090	Procedures of Angiography and Interventional Radiology	3
RATE 4910	Clinical Practice in Mammography	4
RATE 4911	Clinical Practice in Angiography	4

Related Course Requirements - 3 credits

GEP-GEHS 3050	Human Formation, Society, and Culture	3

Real Estate (BBA)

Real Estate (BBA)

The Bachelor of Business Administration (BBA) in Real Estate aspires to promote a theoretical and practical preparation in the areas related to real estate. The Program aims to develop the following competencies: to know the inherent functions the Real Estate field as well as the technical tasks related the real estate industry, such as: transactions, rent and other rights, and the administration of real estate, etc. The program also aims to make students aware of the ethical principles that should prevail in this labor setting. The graduates of this program that aspire to obtain the license of seller and broker must comply with the requirements established by the Real Estate Brokers and Agents Board.

The Metropolitan Campus is authorized to offer this Program.

Competencies Profile of Graduates

The program is designed to permit the development of the following competencies:

Knowledge

To demonstrate knowledge and understanding of:

1. the operation of the real estate market in Puerto Rico.

2. the impact of the legal and approved frame in Real Estate matters.

3. the role that the entrepreneur of Real Estate performs.

4. the basic theories of the current methods of appraisal and the nature of the assessment of properties.

5. the basic principles of urban economics in the Real Estate market.

Skills

1. To contrast the financial values and investments in Real Estate properties.

Attitudes

1. To assume the ethical behavior that should govern all Real Estate businesses.

Requirements for the Bachelor of Business Administration Degree in Real Estate

General Education Requirements	48 credits
Core Course Requirements	35 credits
Major Requirements	32 credits
Prescribed Distributive Requirements	6 credits
Elective Courses	3 credits
Total	124 credits

General Education Requirements - 48 credits

Forty-eight (48) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees." Students in this Program will take GEMA 1200 in the Basic Mathematical Skills category.

Core Course Requirements - 35 credits

ACCT 1161	Introduction to Financial Accounting	4
ACCT 1162	Introduction to Managerial Accounting	4
BADM 1900	Fundamentals of Business Management	3
FINA 2101	Corporate Finance I	3
MAEC 2140	Fundamentals of Quantitative Methods	3
MAEC 2211	Principles of Microeconomics	3
MAEC 2212	Principles of Macroeconomics	3
MAEC 2221	Basic Statistics	3
MAEC 2222	Managerial Statistics	3
MKTG 1210	Introduction to Marketing	3
OMSY 3030	Business Communication in Spanish Or	3
OMSY 3040	Business Communication in English	3

Major Requirements - 32 credits

BADM 3900	Information Systems in Organizations	3
FINA 3500	Introduction to Real Estate	3
MKTG 3230	Integrated Marketing Communication	3
MKTG 3234	Personal Sales	3
REAL 2500	Real Estate Economics	3
REAL 2600	Legal Principles of Real Estate	3
REAL 2700	Obligations and Contracts in Real Estate	3
REAL 3800	Real Estate Funding	3
REAL 3900	Administration Principles in Real Estate	
REAL 4000	Introduction to The Appraisal of Real Estate	3
REAL 4100	Ethics in the Real Estate Business	2

Prescribed Distributive Requirements - 6 credits

Select six (6) credits from the following courses:

BADM 3313	The Law and The Businesses	3
ENTR 2200	Foundations of Entrepreneurship	3
FINA 3150	Personal Finance	3
MKTG 3235	Sales Management	3
REAL 4400	Financial Markets and the Banking Sector in Real Estate	3
REAL 4910	Internship	3

Minor in Real Estate

The Metropolitan Campus is authorized to offer this minor.

Requirements for the Minor in Real Estate - 21 credits

Courses for the Minor in Real Estate

REAL 2500	Real Estate Economics	3
REAL 2600	Legal Principles of Real Estate	3
FINA 2101	Corporate Finance I	3
FINA 3130	Credit Risk Management	3
FINA 3150	Personal Finance	3
FINA 3235	Money and Banking	3
FINA 3500	Introduction to Real Estate	3

Recreation for Elderly Persons (AA)

The Associate of Arts in Recreation for Elderly Persons is designed to academically qualify individuals to serve as leaders that meet the recreational needs of the elderly. The program integrates different areas of knowledge that include mastery of basic skills as articulated in the General Education Program, and a major component with courses related to health, physical education and recreation.

The Arecibo Campus is authorized to offer this program.

Competencies Profile of Graduates

The program is designed to develop the competencies that will enable students to:

Knowledge

Demonstrate knowledge and understanding of:

1. the fundamental elements of recreation for elderly persons.

2. the principles of physical activity and sports training for elderly persons.

Skills

1. Apply the elements of planning, organization and implementation of recreational activities for elderly persons.

2. Apply the principles of physical activity and sports training in the evaluation of recreational needs.

3. Apply the principles of physical activity and sports training in teaching elderly persons.

Attitudes

1. To promote the modeling of attitudes that further recreation, health, physical activity and the integral well-being of human beings.

2. Promote commitment to the highest standards of ethical conduct toward the community to be served.

Requirements for the Associate of Arts in Recreation for Elderly Persons

General Education Requirements	24 credits
Major Requirements	37 credits
Total	61 credits

General Education Requirements - 24 credits

GESP	Spanish - Select 6 credits from the GESP category	6
GEEN	English - Select 6 credits from the GEEN category	6
GEP-GECF 1010	Introduction to the Christian Faith	3
GEP-GEIC 1010	Information and Computing Technologies	3
GEP-GEMA 1000	Quantitative Reasoning	3
GEP-GEHS 2010	Historical Process of Contemporary Puerto Rico Or	3
GEP-GEEC 2000	Entrepreneurial Culture	3

Major Requirements - 37 credits

HPER 1000	History and Foundations of Recreation	3

HPER 1870	Themes in Health, Physical Education and Recreation	2
HPER 1890	Recreation for Older Adults	3
HPER 2010	Planning, Organization and Implementation of Recreational Activities for Older Adults	3
HPER 2020	Physical Activity and Sports Training for Older Adults	3
HPER 2320	First Aid and Personal Safety for Children, Youth and Adults	2
ENTR 2200	Foundations of Entrepreneurship	3
GERO 2000	Introduction to Gerontology	3
GERO 2010	Neuropsychology of the Elderly Adult	3
HPER 2140	Experiences in Movement I	2
HPER 3310	Experiences in Movement III	2
HPER 2540	Social Recreation	3
HPER 2541	Seminar	3

Renewable Energy Technology with Photovoltaic Systems (AA)

Program description

The Associate Degree in Applied Sciences in Renewable Energy Technology with Photovoltaic Systems contains courses that temper theoretical-practical knowledge in the area, such as alternative green energy. Renewable energies are those that are obtained from natural sources that produce energy in an inexhaustible and indefinite way. A photovoltaic system is the result of the grouping and working together of certain electrical components to achieve the transformation of solar energy into usable electrical energy. This type of renewable energy is a great reserve alternative that can be very useful in fields such as health, food, education, telecommunications, among others.

Competencies Profile of Graduates

Upon completion of the Associate of Applied Science degree in Renewable Energy Technology, the graduate of this program will be a professional capable of demonstrating the following knowledge, skills, and attitudes:

Knowledge

1. Explain the solar energy capture process for the correct installation of the modules.

2. Determine the data required during the field study for

the optimal design of the solar system.

3. Select the equipment, materials and tools used in the installation of a photovoltaic system.

4. Produce the ideal dimensions between the capacity of the photovoltaic array, based on the capacity of the inverter and the size of the battery bank in compliance with the project requirements.

5. Know the terminology concerning the profession.

Abilities

1. Select the appropriate places for the installation of photovoltaic systems.

2. Prepare material, equipment and tools for the installation of a photovoltaic system.

3. Check proper operation, after installation.

4. Provide maintenance of equipment and connections of the installed system.

Attitudes

1. Communicate to the client in an ethical and effective manner the instructions for the proper functioning and performance of the system.

Admission requirements

Students applying for admission to any of the Inter American University of Puerto Rico campuses at the undergraduate level must:

1. Submit proof of graduation from an accredited high school with a minimum grade point average of 2.50 or its equivalent.

2. Present the results obtained in the Aptitude and Achievement Tests in English (Aptitude and English Achievement Test) offered by the College Board. Students whose first language is English will be able to take the Scholastic Aptitude Test, while Spanish-speaking students will be able to take the Academic Aptitude Test.

3. Obtain a minimum entrance index of 800. This is calculated in terms of the results of the exams and the high school index.

4. All students who wish to transfer from one campus to another must comply with the admission regulations for the program they are applying for. The student will notify his intention to the Registrar's Office of

the campus to which he wishes to transfer. The Registrar's Office must verify that the student has no restrictions in the system, such as debts, incomplete documents or others in order to complete the transfer.

5. All candidates for admission by transfer from another university or college must file an application for this purpose. The student must request at the Registrar's office of the university or college of origin that a copy of their official credit transcript be sent to the corresponding Admissions Office of the Inter-American University. A student who meets the following will be considered a candidate for admission by transfer:

   a. Have approved at another accredited institution at least 12 credits with a grade of C or higher, except in academic programs that establish different requirements, in which case they must be met.

   b. Not be suspended for disciplinary reasons in the educational institution of origin.

   c. Submit an updated vaccination certificate if you are under 21 years of age.

Retention requirements

1. Comply with the Standard of Satisfactory Academic Progress for undergraduate programs, established in the General Catalog of the University.

Graduation requirements

1. Students must meet the general graduation requirements and achieve a minimum general and concentration average of 2.50.

2. They must pass all concentration courses with a minimum grade of C, except practice in which a grade of A or B will be required.

ASSOCIATE DEGREE REQUIREMENTS IN APPLIED SCIENCE IN TECHNOLOGY OF RENEWABLE ENERGY WITH PHOTOVOLTAIC SYSTEMS

General Education Requirements	24 credits
Concentration Requirements	40 credits
Total	64 credits

General Education Requirements - 24 credits

Twenty-four (24) credits are required as established in the General Catalog in the General Education Requirements section for Associate Degrees. Students will take:

GESP	Spanish - Select 6 credits from the GESP category	6
GEEN	English - Select 6 credits from the GEEN category	6
GEP-GEMA 1200	Fundamentals of Algebra	3
GEP-GECF 1010	Introduction to the Christian Faith	3
GEP-GEIC 1010	Information and Computing Technologies	3
GEP-GEEC 2000	Entrepreneurial Culture	3

Major Requirements - 40 credits

REPS 1100	Introduction to Renewable Energies	3
REPS 2100	Technical Drawing	3
REPS 2300	Solar Energy System Components	3
REPS 2400	Design and Dimensionig of Solar Energy Systems	3
REPS 2910	Practice	2
ELEC 1120	Industrial Safety	3
ELEC 2331	Electrical Circuits Laboratory I	1
ELEC 2332	Electrical Circuits Laboratory II	1
ELEC 2341	Electric Circuits I	3
ELEC 2342	Electrical Circuits II	3
COTN 1131	Electronics I	3
PHYS 3001	General Physics I	4
MATH 1500	Precalculus	5
BADM 1900	Fundamentals of Business Management	3

Restaurant and Food Services Administration (AAS)

The course of studies for the Associate of Applied Science Degree in Restaurant and Food Services Administration is designed for people who wish to acquire skills in dealing with food services. The Program exposes students to principles, concepts and practices that are essential in the food services industry. This Program provides the opportunity for people who already have experience in administration of food services to complete an academic degree and be promoted to supervisory positions. The program aims to prepare graduates for positions in areas such as food service, production, sales and marketing, and in human resources management and supervision. In addition, graduates will have become familiar with different food services to enable them to apply their administrative knowledge to each of them.

The Aguadilla Campus is authorized to offer this Program.

Competencies Profile of Graduates

The Associate Degree in Applied Science in Restaurant Management and Food Services is designed to achieve the development of a professional with the following competencies:

Knowledge

Demonstrate knowledge and understanding of:

1. The characteristic elements of the gastronomy and hospitality industry.

2. The impact of the gastronomy and hospitality industry in the social, cultural, economic and environmental spheres of the country.

3. The organizational components characteristic of gastronomic companies.

4. The laws that apply to restaurant operations as part of the country's tourism industry.

5. Marketing tools and their impact on promoting sales of products and services in hotels and restaurants.

6. The ethical precepts in the decision-making in business.

Skills

1. Demonstrate the ability to make decisions taking into consideration the impact of these on the company.

2. Demonstrate the ability to make changes that allow greater effectiveness in restaurant structures.

3. Perform standardized procedures that allow efficiency in the operation of companies in the

gastronomy industry.

4. Make business decisions in controversial situations using ethical precepts as a guide.

Attitudes

1. Demonstrate a positive attitude towards responsible decision-making and commitment to society.

2. Consider the organizational elements as crucial in the successful performance of restaurants.

3. Demonstrate a positive attitude towards customers and suppliers that results in mutually beneficial relationships.

4. Appreciate ethical behavior as an essential for business success.

Retention Requirements

The Associate of Applied Science Degree in Restaurant and Food Services Administration requires that all students comply with the satisfactory academic progress norm established in the University's current General Catalog.

In addition, they must pass all courses required in the major with a minimum grade of C.

Requirements of the Associate of Applied Science Degree in Restaurant and Food Services Administration

General Education Requirements	24 credits
Major Requirements	45 credits
Total	69 credits

General Education Requirements - 24 credits

GESP	Spanish - Select 6 credits from the GESP category	6
GEEN	English - Select 6 credits from the GEEN category	6
GEP-GECF 1010	Introduction to the Christian Faith	3
GEP-GEIC 1010	Information and Computing Technologies	3
GEP-GEMA 1200	Fundamentals of Algebra	3
GEP-GEHS 2010	Historical Process of Contemporary Puerto Rico Or	3
GEP-GEEC 2000	Entrepreneurial Culture	3

Major Requirements - 45 credits

ACCT 1161	Introduction to Financial Accounting	4
BADM 1900	Fundamentals of Business Management	3
HRMT 1200	Introduction to the Tourism and Hospitality Industry	3
HRMT 1300	Introduction to Food and Beverages Management	3
HRMT 1301	Production Lab and Basic Food Services	2
HRMT 2200	Introduction to Marketing in The Hospitality Industry	3
HRMT 2302	Production Lab and Advanced Food Services	2
HRMT 2500	Human Resources Management in the Hospitality Industry	3
HRMT 2600	Drinks Management and Service	3
HRMT 2650	Purchasing Systems and Inventory Control	3
HRMT 2800	Restaurant Development and Management	3
HRMT 2850	Restaurant Management	3
HRMT 2915	Practicum in Restaurant Management	4
HRMT 3500	Technology and Information Systems in the Hospitality Industry	3
TURI 2000	Tourism Legislation	3

Sales (AAS)

The Associate of Applied Science Degree in Sales aims to study the sales systems and their basic functions geared to achieve their objectives, contact clients and develop presentations on sales. The Program helps the student perform efficiently and effectively in the world of work.

The Ponce Campus is authorized to offer this Program through online education.

Requirements for the Associate of Applied Science Degree in Sales

General Education Requirements	24 credits	
Core Course Requirements	10 credits	
Major Requirements	24 credits	
Elective courses	3 credits	
Total	61 credits	

General Education Requirements - 24 credits

GESP	Spanish - Select 6 credits from the GESP category	6
GEEN	English - Select 6 credits from the GEEN category	6
GEP-GECF 1010	Introduction to the Christian Faith	3
GEP-GEIC 1010	Information and Computing Technologies	3
GEP-GEMA 1200	Fundamentals of Algebra	3
GEP-GEHS 2010	Historical Process of Contemporary Puerto Rico Or	3
GEP-GEEC 2000	Entrepreneurial Culture	3

Core Course Requirements - 10 credits

ACCT 1161	Introduction to Financial Accounting	4
BADM 1900	Fundamentals of Business Management	3
MAEC 2211	Principles of Microeconomics	3

Major Requirements - 24 credits

MKTG 1210	Introduction to Marketing	3
MKTG 2223	Consumer Behavior	3
MKTG 2910	Practice	3
MKTG 2970	Seminar in Sales	3
MKTG 3230	Integrated Marketing Communication	3
MKTG 3234	Personal Sales	3
MKTG 3235	Sales Management	3
MKTG 3236	Retail Selling	3

Security Management (BS)

Security Management (BS)

The Bachelor of Science in Security Management is an interdisciplinary program that aims to develop professionals, administrators, managers, business owners and future entrepreneurs in this field. Emphasizes the development and implementation of tools, strategies and security programs that respond to changes in physical and virtual contexts. The Program highlights contemporary aspects related to occupational safety, escalations, identity theft and information and cyber-attacks.

The Ponce Campus is authorized to offer this program through online education.

Program Goals

1. Prepare professionals with theoretical and practical training in the management of security systems.

2. Encourage critical analysis and decision making in the management of security risk situations.

3. Develop plans and strategies that respond to the security needs of organizations.

Program Objectives

1. Know the contemporary aspects related to occupational safety, break-ins, identity theft and information and cyber-attacks.

2. Evaluate the management processes and physical and virtual security practices of the organization.

3. Integrate values and ethical and legal principles that promote security in a physical and virtual environment.

Competencies Profile of Graduates

The Program is designed to develop the competences that allow the student to:

Knowledge

1. Know the theoretical and practical foundations of the security field.

2. Identify security tools that complement the corporate strategy.

3. Understand the new challenges and paradigms of a manager in the physical and virtual environment of security.

Skills

1. Develop strategic security plans for a company.

2. Apply theories and models of the field of security in the provision of services in various scenarios.

3. Implement policies, legislation and ethical principles that govern the security field.

Attitudes

1. Value the profession through an interdisciplinary perspective and effective communication in different security contexts.

2. Show respect for diversity, ethical principles and social responsibility.

3. Recognize the importance of continuous learning in the exercise of their profession.

Graduation Requirements

Approve all the core and major courses with a minimum grade of C.

Requirements for the Bachelor of Science in Security Management

General Education Requirements	48 credits
Core Requirements	37 credits
Major Requirements	30 credits
Elective Courses	6 credits
Total	121 credits

General Education Requirements - 48 credits

Forty-eight (48) credits are required, as explained in the General Education Requirements for Bachelors section.

Core Requirements - 37 credits

ACCT 1161	Introduction to Financial Accounting	4
BADM 1900	Fundamentals of Business Management	3
BADM 3900	Information Systems in Organizations	3
HRMA 3200	Labor Security and Hygiene	3
CJUS 2070	Human and Civil Rights	3
CJUS 2260	Foundations of Criminal Investigation	3
CJUS 3025	Criminal Law	3
ENTR 2200	Foundations of Entrepreneurship	3
ENTR 3900	Entrepreneurial and Managerial Strategies	3
MAEC 2221	Basic Statistics	3
MKTG 1210	Introduction to Marketing	3
SOCI 2080	Criminal Justice System	3

Major Requirements - 30 credits

SECU 1100	Security Fundamentals	3
SECU 2100	Cybercrimes	3
SECU 3300	Web Security and Wireless Networks	3
SECU 3400	Security Systems Technology	3
SECU 3500	Policy and Administration of Security Technology	3
SECU 4100	Audit and Security	3
SECU 4200	Disaster Recovery and Continuity	3
SECU 4300	Legal Aspects of Security	3
SECU 4400	Social Engineering and Ethical Hacker	3
SECU 4500	Integrative Seminar	3

Minor in Security Management

The Minor in Security Management is designed to provide the student of any discipline with knowledge in the field of security, a crucial element for any company or individual. It highlights contemporary aspects related to security, cyber-attacks, recovery and continuity, and the development of efficient and effective security measures techniques.

The Ponce Campus is authorized to offer this minor through online education.

Requirements for the Minor in Security Management - 18 credits

Courses for the Minor in Security Management

SECU 1100	Security Fundamentals	3
SECU 2100	Cybercrimes	3
SECU 3300	Web Security and Wireless Networks	3
SECU 4100	Audit and Security	3
SECU 4200	Disaster Recovery and Continuity	3
SECU 4400	Social Engineering and Ethical Hacker	3

Social Sciences (BA)

The Bachelor of Arts in Social Sciences prepares professionals in Social Sciences with a multidisciplinary and transdisciplinary approach. The program focuses on the study of the fundamentals of Social Sciences and is complemented by the study of courses in specific areas that the student will determine with the collaboration of his academic adviser and, finally, the approval of the department director. This provides a flexible, innovative programmatic vision that promotes the comprehensive

development of the student to develop their cognitive and creative abilities, as well as the critical judgment necessary to function in the contemporary world. In addition, it provides the broad base to continue graduate studies in different specialties of the disciplines of the Social Sciences.

Program goals

The Social Sciences Program has as goals:

1.

Promote the comprehensive preparation of students so that they acquire the necessary skills to perform in fields related to Social Sciences in the contemporary world.

2.

Develop professionals with a vision and a responsible attitude regarding the implications of their behavior in the field of Social Sciences.

Program objectives

1.

Provide knowledge in the area of Social Sciences complemented by the study of courses in specific areas.

2.

Develop in the student an integrated vision of the collective behavior of human beings from the study and understanding of the fundamentals and theoretical bases of the Social Sciences.

3.

Provide a flexible and innovative programmatic vision that promotes the development of their cognitive abilities, as well as the critical judgment necessary to perform and contribute their knowledge as professionals in the contemporary world.

Competencies Profile of Graduates

This Program is designed to develop the competencies that will permit students to:

Knowledge

1.

Interpret the historical background, the theories and methodologies of the Social Sciences and their contribution to the knowledge of the human social

phenomenon.

2.

Recognize social research methodologies and their application in the search for solutions to current social problems.

3.

Identify the contributions of cultural diversity to knowledge, enrichment and human social development.

Abilities

1.

Apply the methods and techniques of social research to the studies of the individual, society and culture.

2.

Integrate the knowledge of the different areas of knowledge, such as Sociology, Economics, Psychology, Anthropology, Criminal Justice, Social Work, Political Sciences and their branches to the current social task.

3.

Recognize the contribution of various cultural groups to social management.

Attitudes

1.

Show appreciation for social and cultural diversity.

2.

Develop critical thinking from a multidisciplinary and transdisciplinary conceptual framework.

3.

Incorporate qualitative research methods and processes into the study of the social.

Admission Requirements

In addition to the admission requirements established in this Catalog, students of this Program must be interviewed when this is necessary. If an interview is necessary for online education students who will attend courses outside Puerto Rico, this may be conducted through the means available to students. The interview will be supervised by a proctor in the place where the student is located as determined by the University.

Requirements for the Bachelor of Arts Degree in Social Sciences

General Education Requirements	48 credits
Core Course Requirements	19 credits
Major Requirements	45 credits
Elective Courses	9 credits
Total	121 credits

General Education Requirements - 48 credits

Forty eight (48) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees."

Core Course Requirements - 19 credits

ANTH 1040	Introduction to Anthropology	3
POLS 1011	Introduction to Political Science	3
SOCI 1030	Introduction to Sociology	3
SOCI 4800	Sociological Research	4
ANTH 1040	Introduction to Anthropology	3
ANTH 2030	Social Anthropology	3
PSYC 1051	General Psychology I	3
MAEC 1213	History of Economic Thought	3

Major Requirements - 45 credits

Students will take 45 credits among the following disciplines: Sociology, Anthropology, Political Science, Economics, and Psychology and their subdisciplines, which will be selected among the courses scheduled in the corresponding term with the approval of the department director.

Social Work (BA)

Social Work (BA)

This Program aims to form professional generalist social workers in a broad and profound manner. Consistent with the Council on Social Work Education (CSWE), General Social Work is based on the use of prevention and intervention methods with individuals, families, groups, organizations, and communities, based on the best practices evidenced by research. The generalist social worker uses ethical principles and critical thinking in the defense of diversity and human rights, as well as in his fight for social, economic and environmental justice.

The Aguadilla, Arecibo, Fajardo and Metropolitan campuses are authorized to offer this Program.

The Program in the Aguadilla, Arecibo, Fajardo, and Metropolitan campuses is accredited by the Council on Social Work Education (CSWE) (http://www.cswe.org).

Competencies Profile of Graduates

The Program is designed to develop the core competencies, in agreement with the 2015 Educational Policy and Accreditation Standards (EPAS) of the Council on Social Work Education (CSWE) that will allow students at the generalist level to:

1. Demonstrate ethical and professional behavior.

2. Engage diversity and difference in practice.

3. Advance human rights and social, economic, and environmental justice.

4. Engage in practice-informed research and research-informed practice.

5. Engage in policy practice.

6. Engage with individuals, families, groups, organizations, and communities.

7. Assess individuals, families, groups, organizations, and communities.

8. Intervene with individuals, families, groups, organizations, and communities.

9. Evaluate practice with individuals, families, groups, organizations, and communities.

Admission Requirements

To be admitted to the Program, the student must:

1. Fill out the Social Work Program admission form.

2. Have a minimum general grade point average of 2.25 at the university level.

3. Have passed course SOWO 1503 with a minimum grade of B.

Internal and External Transfer Requirements

To be admitted to the Program, internal and external transfer students must:

1. Comply with all admission regulations for transfer and intra-university transfer students as established in the General Catalog.

2. Have a minimum general grade point average of 2.25

of the campus or university of origin.

3. Have an evaluation from the director or academic counselor of the IAUPR if the student wishes to transfer from another institution that offers the Social Work program.

4. To graduate from the Council on Social Work Education (CSWE) accredited program in Social Work, the student must have approved the last courses, equivalent to 51% of the major credits, in a Social Work Program accredited by the CSWE.

Non-validation policy

The Bachelor of Arts in Social Work does not grant academic credits for life or work experiences.

Practice Requirements

To be admitted to the Practice and to enroll Practice Experience in Generalist Social Work I, II: SOWO 4911 and 4912, students must:

1. Have approved ninety (90) credits.

2. Have a general minimum grade point average of 2.50, and also in the major.

3. Complete the application process for the Practice with all the documents required by the Program:
- Negative certificate of current criminal record issued by the Puerto Rico Police.
- Health Certificate valid for one year issued by the Department of Health.

Some agencies or programs stipulate additional requirements. The student is responsible for complying with any other requirement that the agency or practice center stipulates. These requirements may be: negative doping test, sex offender registration and hepatitis vaccines.

Graduation Requirements

To graduate with a Bachelor of Arts Degree in Social Work, the student must:

1. Have a minimum grade point average of major of 2.50 in the Major Requirements..

2. Have approved course SOWO 1503 with a minimum grade of B and all other Major Requirements, identifies as SOWO, with a minimum grade of C.

3. To graduate from the Council on Social Work

Education (CSWE) accredited program in Social Work, the student must have approved the last courses, equivalent to 51% of the major credits, in a Social Work Program accredited by the CSWE.

Requirements for the Bachelor of Arts Degree in Social Work

General Education Requirements	48 credits	
Major Requirements	54 credits	
Related Course Requirements	12 credits	
Elective Courses	6 credits	
Total	120 credits	

General Education Requirements - 48 credits

Forty-eight (48) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees."

Major Requirements - 54 credits

SOWO 1503	Introduction to Social Work	3
SOWO 2461	Individuals and their Social Environment I	3
SOWO 2462	Individuals and their Social Environment II	3
SOWO 3503	Theories and Debates in the Social Context of the Profession	3
SOWO 3505	Introduction to Social Agencies Administration and Supervision	3
SOWO 3514	Social Policy and Services	3
SOWO 3801	Communication and Interview Process	3
SOWO 3802	Files and Report Writing	3
SOWO 4873	Social Research Methodology	4
SOWO 4911	Practice Experiences in Generalist Social Work I	4
SOWO 4912	Practice Experiences in Generalist Social Work II	4
SOWO 4931	Generalist Social Work with Individuals and Families	3
SOWO 4932	Generalist Social Work with Groups	3
SOWO 4933	Generalist Social Work with The Community	3
SOWO 4951	Seminar in Education Practice I	3
SOWO 4952	Seminar in Education Practice II	3
SOWO 497_	Seminar	3

Related Course Requirements - 12 credits

BIOL 1003	Basic Biological Concepts	3
POLS 1011	Introduction to Political Science	3
PSYC 3001	Statistical Methods I	3
SOCI 3010	Diversity and Marginality	3

Minor in Gerontology for Social Work

The Aguadilla and Arecibo campuses are authorized to offer this Minor.

Requirements for the Minor in Gerontology for Social Work - 18 credits

Courses for the Minor in Gerontology for Social Work

GERO 2000	Introduction to Gerontology	3
GERO 2010	Neuropsychology of the Elderly Adult	3
GERO 3310	Ethical and Legal Aspects in Gerontology	3
GERO 3311	Loss and Death	2
GERO 3312	Trends and Controversies in Elderly Adult Care	2
GERO 4916	Practice in Social Gerontology	2
GERO 4970	Seminar in Social Gerontology	3

Spanish (BA)

Spanish (BA)

The curriculum in Spanish is designed to develop student skills in the oral and written language as well as to provide general knowledge of the Spanish, Spanish-American, and Puerto Rican literature in the historical and philological context of the Spanish language. The mastery and fluency in handling the vernacular language is an unavoidable commitment for the Spanish program and humanistic training program and for the Institution itself.

With the academic preparation provided, the Program graduates will be able to compete in the work force in different types of jobs that require fluidity and good handling of the Spanish language. It also prepares them to continue graduate studies.

A Bachelor of Arts Degree in Spanish is offered. The Institution offers four related minors.

The Metropolitan Campus is authorized to offer this Program.

Requirements for the Bachelor of Arts Degree in Spanish

General Education Requirements	48 credits
Major Requirements	39 credits
Prescribed Distributive Requirements	15-17 credits
Elective Courses	12 credits
Total	114-116 credits

General Education Requirements - 48 credits

Forty-eight (48) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees."

Major Requirements - 39 credits

SPAN 2510	Introduction to Text Analysis	3
SPAN 2541	Advanced Grammar I	3
SPAN 2542	Advanced Grammar II	3
SPAN 3011	Spanish Linguistics I	3
SPAN 3012	Spanish Linguistics II	3
SPAN 3020	Writing Workshop	3
SPAN 3021	Spanish Literature I	3
SPAN 3022	Spanish Literature II	3
SPAN 3071	Spanish-American Literature I	3
SPAN 3072	Spanish-American Literature II	3
SPAN 3211	Puerto Rican Literature I	3
SPAN 3212	Puerto Rican Literature II	3
SPAN 4196	The Language of Puerto Rico	3

Prescribed Distributive Requirements - 15 to 17 credits

Three courses in Literature and/or Linguistics at the 4000 level	9
Another language (French, Italian, Latin or Portuguese)	6-8

Minor in Bilingual Oral and Written Communication

The Metropolitan Campus is authorized to offer this minor.

Requirements for the Minor in Bilingual Oral and Written Communication - 21 credits

Core Course Requirements - 18 credits

ENGL 3007	Advanced Writing	3
ENGL 3025	Writing of Professional Documents	3
ENGL 3310	Public Speaking	3
SPAN 3015	Oral Communication	3
SPAN 3020	Writing Workshop	3

SPAN 3025	Writing of Professional Documents	3

Prescribed Distributive Requirements - 3 credits

ENGL 4015	Translation Workshop	3
	Or	
SPAN 4015	Translation Workshop	3

Minor in Oral and Written Communication (Spanish)

The Metropolitan Campus is authorized to offer this minor.

Requirements for the Minor in Oral and Written Communication - 18 credits

Courses for the Minor in Oral and Written Communication

SPAN 2541	Advanced Grammar I	3
SPAN 2542	Advanced Grammar II	3
SPAN 3015	Oral Communication	3
SPAN 3020	Writing Workshop	3
SPAN 3025	Writing of Professional Documents	3
SPAN 4196	The Language of Puerto Rico	3

Minor in Spanish

The Metropolitan Campus is authorized to offer this minor.

Requirements for the Minor in Spanish - 18 credits

Courses for the Minor in Spanish

SPAN 2510	Introduction to Text Analysis	3
SPAN 2541	Advanced Grammar I	3
SPAN 2542	Advanced Grammar II	3

Note: In addition, the student will take three (3) course in Linguistics and six (6) credits in Literature.

Minor in Strategic Languages

The minor in strategic languages offers the opportunity for students to be exposed to other languages which will prepare them for a better professional performance in the globalized world of today. Upon acquiring the linguistic competencies, student will acquire a greater awareness of the culture of the speakers, as well as becoming better qualified to coexist in a world that is more diverse every day.

The Minor in Strategic Languages will consist of a minimum of eighteen (18) credits. A minimum grade point average of 3.00 in the minor is required for certification.

The Metropolitan Campus is authorized to offer this minor.

Requirements for the Minor in Strategic Languages - 18 credits

Courses for the Minor in Strategic Languages

Students will select 18 credits from the following courses:

ARAB 1001	Basic Arabic I	4
ARAB 1002	Basic Arabic II	4
ARAB 2021	Intermediate Arabic I	3
ARAB 2022	Intermediate Arabic II	3
FREN 1001	Elementary French	4
FREN 1002	Elementary French	4
FREN 2021	French III	3
FREN 2022	French IV	3
ITAL 1001	Elementary Italian	4
ITAL 1002	Elementary Italian	4
ITAL 2021	Italian III	3
ITAL 2022	Italian IV	3
MAND 1001	Basic Mandarin I	4
MAND 1002	Basic Mandarin II	4
MAND 2021	Intermediate Mandarin I	3
MAND 2022	Intermediate Mandarin II	3
PORT 1001	Elementary Portuguese	4
PORT 1002	Elementary Portuguese	4
PORT 2021	Portuguese III	3
PORT 2022	Portuguese IV	3
RUSS 1001	Elementary Russian	4
RUSS 1002	Elementary Russian	4
GERM 1001	Elementary German	4
GERM 1002	Elementary German	4
GERM 2021	German III	3
GERM 2022	German IV	3

Special Educational Services Assistant (AA)

The Associate Degree Program in Arts in Special Educational Services Assistant aims to train an educational assistant who possesses the knowledge, skills and attitudes that will allow him to adequately assist a student with learning difficulties. To achieve this goal, the Program proposes:

- Enrich the knowledge and skills of students in the area of special education through the provision of basic and intermediate level courses.

- Train students to perform in educational environments that serve students with learning difficulties.

- Develop in the student competencies that allow him

to assist students with learning difficulties to maximize their academic achievement.

This Program does not lead to a teaching certification from the Department of Education.

The Ponce Campus is authorized to offer this program.

Competencies Profile of Graduates

This program is designed to develop the skills that allow the student:

Knowledge

1. Identify the fundamental concepts of human learning.

2. Recognize the difficulties in learning in the population of special education students.

3. Define the basic concepts related to special education.

Skills

1. Apply learning compensation techniques.

2. Assist the student in his academic progress.

3. Facilitate the participation of the special education student in the general curriculum.

4. Promote the participation of the family in the teaching-learning process.

Attitudes

1. Demonstrate sensitivity towards students with learning difficulties.

2. Value educational and social equity.

Requirements for the Associated Degree in Arts in Special Educational Services Assistant

General Education Requirements	24 credits
Major Requirements	36 credits
Total	60 credits

General Education Requirements - 24 credits

Twenty-four (24) credits are required as set forth in the General Catalog in the General Education Requirements for Associate Degrees section. Students of this program will take GEMA 1001 in the Basic Math Skills category.

Major Requirements - 36 credits

EDUC 1080	Field Experiences in The Educational Scenario I	1
EDUC 2021	History and Philosophy of Education	3
EDUC 2022	Society and Education	3
EDUC 2031	Developmental Psychology	3
EDUC 2053	Nature and Needs of Students with Autism	3
EDUC 2055	Psycho-Social Aspects of Students with Autism	3
EDUC 2057	Communication Aspects of Students with Autism	3
EDUC 2870	The Exceptional Student Population	4
EDUC 2890	Field Experiences in The Educational Scenarios Ii	2
EDUC 2905	Nature and Needs of Students with Intellectual Disability and Mental Disorders	3
EDUC 2906	Nature and Needs of Students with Specific Learning Problems, ADD And ADHD	3
EDUC 3015	Clinical Experiences in The Educational Scenario I	2
EDUC 3054	Methodology of Teaching for the Student with Autism	3
EDUC 3420	Curricular Content, Diagnosis and Treatment of Learning Problems in Mathematics	3
EDUC 3440	Curricular Content, Diagnosis and Treatment of Literacy Problems	3

Speech and Language Therapy (BS)

The Bachelor of Science Program in Speech and Language Therapy aims to prepare competent professionals who can collaborate in taking care of the needs of children and young people of Puerto Rico with communication disorders. The professional graduates of the Program will be able to offer therapeutic services to children and young people between 0-21 years of age under the supervision of a licensed Speech and Language Pathologist, as established by Law 77 which regulates the practice of professionals of Speech and Language Therapy, Speech Pathology, and Language and Audiology in Puerto Rico. Graduates of this Program will be capable of performing tasks of evaluation and prevention of communication disorders.

In addition to the admission requirements in this Catalog, students of this Program must present evidence of graduation from an accredited high school or its equivalent with a minimum grade point index of 2.50 or its equivalent.

The Aguadilla, Fajardo and Ponce campuses are authorized to offer this Program.

Competencies Profile of Graduates

The Speech and Language Therapy Program is designed to develop the competencies that will enable students to:

Knowledge

1. Know the procedures and screening instruments for speech, language and hearing used with the population from 0-21 years of age.

2. Know the techniques and strategies for the treatment of disorders of articulation, voice, fluidity and language, in spoken as well as in written speech, in children and young people between 0-21 years of age.

Skills

1. Design activities and materials that adapt to the needs and capacities of the clients to whom you offer services.

2. Document the performance of the client in a precise, concise, objective and quantifiable form in each intervention.

3. Use technology as a tool for therapeutic interventions.

4. Select screening instruments in harmony with the population and the communication problem you are dealing with.

5. Interpret and report the screening results in a reliable manner.

6. Develop appropriate activities for the objectives of the intervention plan designed by the Speech and Language Pathologist, in a logical and organized form.

7. Plan creative follow-up activities to the objectives worked on in the therapy, to be implemented in the daily environments of the child by caretakers.

8. Apply appropriate methods, techniques and strategies in harmony with the condition, level of severity and skills of the client.

9. Develop educational chats and workshops on the prevention of communication disorders for clients, relatives and the community in general.

Attitudes

1. Indicate the importance of maintaining appropriate interpersonal relations with the children to whom you offer services and to their family members.

2. Demonstrate sensitivity towards the needs and the cultural values of clients and their families.

3. Demonstrate the importance of handling properly the conduct of the client in the interventions.

4. Back up your interventions with the ethical theories and principles of the Speech and Language Therapy profession.

Admission Requirements for the Practice

To be admitted to the practice in the Bachelor's Degree of Sciences in Speech Therapy the following is required:

1. A formal application and approval of the director of academic department or his representative.

2. A minimum general grade index of 2.50.

3. A current negative certificate of criminal records issued by the Police of Puerto Rico.

4. A current certificate of health issued by the Department of Health.

5. Evidence of vaccination against Hepatitis B.

Retention Requirements

1. Pass all major and related requirements of the Program with a minimum grade of C, except the practice courses (SPTH 4914, SPTH 4915) which must be passed with minimum grade of B.

Graduation Requirements

1. Pass the courses of the major with a minimum grade of C.

2. Pass the Practice courses with a minimum grade of B (SPTH 4914, SPTH 4915).

3. Meet the graduation requirements established in the current General Catalog.

Requirements for the Bachelor of Science Degree in Speech and Language Therapy

General Education Requirements	48 credits	
Major Requirements	63 credits	
Prescribed Distributive Requirements	9-10 credits	
Total	120-121 credits	

General Education Requirements - 48 credits

Forty and eight (48) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees". Students of this Program will take course GEST 2020 (The Natural Environment and the Human Being) in the Scientific and Technological Context category and course GEHS 3050 (Human Formation, Society, and Culture) in the Historical and Social Context category. They will take course GEMA 1200 in the Basic Skills in Mathematics category.

Major Requirements - 63 credits

SPTH 1010	Anatomy and Physiology of Speech and Language	3
SPTH 1011	Normal Development of Language	3
SPTH 1122	Introduction to Audiology	3
SPTH 1123	Ethical and Legal Matters and Clinical Procedures	3
SPTH 1124	Fluency Disorders in Children	3
SPTH 2010	Disorders of Articulation and Phonology	3
SPTH 2015	Voice Disorders in Children	3
SPTH 2024	Use of Technology in The Practice of Speech and Language Therapy	3
SPTH 2110	Cleft Palate and Craniofacial Anomalies	3
SPTH 2120	Intervention with Children with Hearing Impairments	3
SPTH 2130	Cognitive and Psycho-Social Conditions Associated with Speech and Language Problems	3
SPTH 3020	Identification and Treatment of Children with Oral Language Disorders	3
SPTH 3021	Identification and Treatment of Children with Written Language Disorders	3
SPTH 3022	Clinical Documentation in the Profession of Speech and Language Therapy	3
SPTH 3140	Early Intervention	3
SPTH 3141	Therapeutic Interventions for Children with Speech and Language Problems	3
SPTH 3142	Sign Language	3
SPTH 3143	Dysphagia in Children	2
SPTH 3210	Augmentative and Alternative Aids for Communication in Children	3
SPTH 4141	Integratated Seminar I	2
SPTH 4142	Integratated Seminar II	2
SPTH 4914	Practicum I	1
SPTH 4915	Practicum II	2

Prescribed Distributive Requirements - 9-10 credits

Select nine (9) or ten (10) credits from the following courses:

EDUC 2031	Developmental Psychology	3
EDUC 2032	Learning Psychology	3
EDUC 2053	Nature and Needs of Students with Autism	3
EDUC 2870	The Exceptional Student Population	4
EDUC 2905	Nature and Needs of Students with Intellectual Disability and Mental Disorders	3
EDUC 2906	Nature and Needs of Students with Specific Learning Problems, ADD And ADHD	3
EDUC 3290	Management of Student Behavior in the Classroom	3

Sports and Fitness Management (BA)

The Bachelor of Arts program in Sports and Fitness Management aims to train professionals to administer, market and develop sports training programs. It provides the tools to successfully establish and administer a sports business. Likewise, it prepares those interested in the development of training programs with scientific base. This multidisciplinary program integrates the areas of Physical Education, Business Administration and Marketing.

The Metropolitan Campus is authorized to offer this Program.

Requirements for the Bachelor of Arts Degree in Sports and Fitness Management

General Education Requirements	48 credits
Major Requirements	58 credits
Prescribed Distributive Courses	6 credits
Elective Courses	9 credits
Total	121 credits

General Education Requirements - 48 credits

Forty-eight (48) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees.

Major Requirements - 58 credits

ACCT 1161	Introduction to Financial Accounting	4
BADM 1900	Fundamentals of Business Management	3
BADM 3300	Communication in Management	3
HRMA 2100	Human Resource Administration	3
HRMA 3100	Leadership and Supervision	3
HRMA 3500	Labor Legislation	3
ENTR 2200	Foundations of Entrepreneurship	3
HPER 2270	Kinesiology and Functional Anatomy	3
HPER 2330	First Aid and Personal Safety for Children, Youth and Adults	3
HPER 3040	Legal Foundations in Sports	3
HPER 3480	Nutrition in Sports, Exercise and Physical Activity	3
HPER 4170	Physiology of Human Movement	3
HPER 4305	Sport Training Methodology	3
HPER 4308	Design of Exercise Programs	3
HPER 4310	Functional Training Methodology	3
HPER 4444	Clinical Experiences in Training	3
SRIM 1020	Foundations of Sports and Recreation	3
SRIM 2300	Introduction to Sports Marketing	3
SRIM 3030	Development of Programming of Sport And Recreational Centers	3

Prescribed Distributive Requirements - 6 credits

Students will select six (6) credits from the following courses:

HPER 3010	Sports Psychology	3
HPER 3050	Introduction to the Prevention and Management of Injuries	3
HPER 3495	Principles of Therapeutic Recreation	3

Sports Technology (BA)

Sports Technology (BA)

The Bachelor of Art in Sport Technology will prepare the student in the evaluation of traumas dealing with soft and hard tissue, medical emergencies and accidents, as well as in possible chronic-degenerative diseases. Such protocol takes place in athletic populations and in individuals that practice exercises for the maintenance of health. Also, accident prevention and dealing with the rehabilitation of the injured person are studied. The physiological, mental, social and dietetic aspects of the people who participate in competitive or recreational sport activities are described. The Program emphasizes the design and structuring of methods of physical-sport training in a scientific manner for special populations.

The Guayama, Metropolitan and San Germán campuses are authorized to offer this Program.

Competencies Profile of Graduates

The program of the Bachelor of Arts in Sports Technology is designed to develop the professional competencies that will enable students to:

Knowledge

Demonstrate knowledge and understanding of:

1. The biopsychosocial factors that affect the field of sport technology, in sport scenarios of a competitive and recreational nature, methodologies of sport training or in programs of exercises and physical activities.

2. The knowledge, concepts and foundations for the prevention, the evaluation and the managing of injuries that happen in sports, physical-sport training and in recreational programs.

3. The nutritional aspects and their effects in sport performance, individual health and the collective well-being.

Skills

1. Evaluate the injured person, the potential participant of a program of physical exercise-activity and the competitive-recreational sport activities, as well as the assessment and the alignment of the muscular-skeletal kinetic chain.

2. Apply the different types of therapeutic bandages and the protectors.

3. Apply the techniques of therapeutic massage, according to the stage of competition of the athlete.

4. Apply the basic procedures for the acute and chronic biopsychosocial treatment of typical injuries in athletes and medical emergencies for diverse populations.

5. Design programs of physical and psycho-social rehabilitation, systems of physical-sport and recreational training, and of physical activity, based on the specific profile of the athlete, the apparently healthful populations, the individuals with a variety of chronic-degenerative diseases, obesity and in the pediatric, geriatric and feminine population.

Attitudes

1. Foment the modelling of attitudes that promote health, the integral well-being and the quality of life.

2. Model a professional practice with ethics based on principles of respect and esteem for the sport technology discipline.

Requirements for the Bachelor of Arts Degree in Sports Technology

General Education Requirements	48 credits
Major Requirements	66 credits
Elective Courses	6 credits
Total	120 credits

General Education Requirements - 48 credits

Forty-eight (48) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees."

Major Requirements - 66 credits

HPER 2210	Fundamentals of Physical Education and Sport Technology	3
HPER 2270	Kinesiology and Functional Anatomy	3
HPER 2330	First Aid and Personal Safety for Children, Youth and Adults	3
HPER 3010	Sports Psychology	3
HPER 3050	Introduction to the Prevention and Management of Injuries	3
HPER 3051	Therapeutic Massages	3
HPER 3330	Fundamental Skills and Training in Team Sports IV	3
HPER 3360	Fundamental Skills and Training in Individual Sports V	3
HPER 3380	Evaluation of Injuries and Design of a Program of Physical Rehabilitation in Individual and Team Sports	3
HPER 3430	Personal and Community Health and Safety	3
HPER 3480	Nutrition in Sports, Exercise and Physical Activity	3
HPER 3495	Principles of Therapeutic Recreation	3
HPER 3800	Trends and Issues in Athletic Training	3
HPER 4020	Administration of Physical Education, Wellness, Health and Sport Programs	3
HPER 4170	Physiology of Human Movement	3
HPER 4180	Measurement, Evaluation and Investigation of The Development of Physical Fitness and Its Components	3
HPER 4200	Techniques and Skills for the Personal Trainer	3
HPER 4305	Sport Training Methodology	3
HPER 4308	Design of Exercise Programs	3
HPER 4310	Functional Training Methodology	3
HPER 4441	Practicum in Athletic Training I	3
HPER 4442	Practicum in Athletic Training II	3

Minor in Coaching and Sports Physical Training

The minor in Coaching and Sports Physical Training is intended to equip students with the skills necessary to perform successfully as a coach and sports physical trainer. This minor is attached to the Bachelor of Arts in Sports Technology.

The Guayama, Metropolitano and San Germán campuses are authorized to offer this minor.

Requirements for the Minor in Sports Coaching and Physical Training - 22 credits

Courses for the Minor in Sports Coaching and Physical Training

HPER 3350	Motor Learning and Analysis of Movement	3
HPER 4306	Integrated Periodization of Physical Sports Training	3
HPER 4313	Methodology for Muscle Fitness Training	3
HPER 4315	Fundamentals of Coaching	3
HPER 4320	Coaching and Officiating Soccer	2
HPER 4330	Coaching and Officiating Basketball	2
HPER 4340	Coaching and Officiating Baseball	2
HPER 4350	Coaching and Officiating Track and Field	2
HPER 4360	Coaching and Officiating Volleyball	2

Minor in Sports Technology

This minor concentration qualifies the student to work in the area of prevention and management of athletic injuries. It also prepares them to work as a coach for sports and athletic teams, to prepare physical training programs, learning massage techniques and basic knowledge of nutrition concepts applied to exercise and sports.

The San Germán Campus is authorized to offer this minor.

Requirements for the Minor in Sports Technology - 27 credits

Courses for the Minor in Sports Technology

HPER 2270	Kinesiology and Functional Anatomy	3
HPER 3010	Sports Psychology	3
HPER 3050	Introduction to the Prevention and Management of Injuries	3
HPER 3051	Therapeutic Massages	3
HPER 3380	Evaluation of Injuries and Design of a Program of Physical Rehabilitation in Individual and Team Sports	3
HPER 3480	Nutrition in Sports, Exercise and Physical Activity	3
HPER 4170	Physiology of Human Movement	3
HPER 4305	Sport Training Methodology	3
HPER 4441	Practicum in Athletic Training I	3

Studies in Religion (AA)

The Associate of Arts Degree in Studies in Religion aims to offer a degree that permits students to move to the Bachelor of Arts Degree to form facilitators capable of offering ecumenical instruction in harmony with the particular needs of society.

The Metropolitan Campus is authorized to offer this Program in campus and through online education.

Requirements for the Associate of Arts Degree in Studies in Religion

General Education Requirements	24 credits
Major Requirements	37 credits
Elective Courses	3 credits
Total	64 credits

General Education Requirements - 24 credits

GESP	Spanish - Select 6 credits from the GESP category	6
GEEN	English - Select 6 credits from the GEEN category	6
GEP-GECF 1010	Introduction to the Christian Faith	3
GEP-GEIC 1010	Information and Computing Technologies	3
GEP-GEMA 1000	Quantitative Reasoning	3
GEP-GEHS 2010	Historical Process of Contemporary Puerto Rico Or	3
GEP-GEEC 2000	Entrepreneurial Culture	3

Major Requirements - 37 credits

RELI 2013	Compared Religions	3
RELI 2020	Introduction to the Bible	3
RELI 2030	Phenomenology of Religion	3
RELI 2100	Applied Bibliographic Research	1
RELI 2311	History and Theology	3
RELI 2312	History and Theology II	3
RELI 3011	Old Testament I	3
RELI 3021	New Testament I	3
RELI 3034	Spirituality	3

RELI 3065	Christian Ethics	3
RELI 3313	History and Theology III	3
EDUC 2021	History and Philosophy of Education	3
EDUC 2031	Developmental Psychology	3

Studies in Religion (BA)

Studies in Religion (BA) Requirements

The Bachelor of Arts degree in Studies in Religion aims to forge facilitators capable of offering ecumenical instruction in agreement with the particular needs of society. The Bachelor of Arts Degree in Studies in Religion provides the academic resources necessary for graduate studies in Religion, Theology and related areas.

The courses in religion are in harmony with the Christian ecumenical orientation of the University and the official norms regarding this, which appear in this Catalog under "Religious Life Policy (p. 54)". The Institutional goal is to develop individuals with an ecumenical perspective who: 1) understand the Christian faith and its implications for our culture; 2) know and respect the most important aspects of the world's major religions, and 3) know and appreciate the study of religion in a university curriculum which maintains a dynamic and harmonious relationship between faith and critical reasoning; and between religion and the arts and sciences.

The Aguadilla, Fajardo, and Metropolitan Campuses are authorized to offer this Program. The Metropolitan Campus is also authorized to offer this Program through online education.

Competencies Profile of Graduates

The program is designed to permit the development of the following competencies:

Knowledge

To demonstrate knowledge and understanding of:

1. the cultural, political, economic and social background of the Biblical world.

2. the historical background of the development of the Christian mysticism and its diverse manifestations.

3. the basic concepts of theology.

4. the ideas that sustain religious thinking.

Skills

1. To design instructional and administrative plans with religious contents.

2. To apply the methods and techniques of planning and administration of processes related to organizations of social and religious service.

Attitudes

1. To value religious pluralism in the educational process.

Requirements for the Bachelor of Arts Degree in Studies in Religion

General Education Requirements	48 credits
Major Requirements	58 credits
Elective Courses	15 credits
Total	121 credits

General Education Requirements - 48 credits

Forty-eight (48) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees."

Major Requirements - 58 credits

RELI 2013	Compared Religions	3
RELI 2020	Introduction to the Bible	3
RELI 2030	Phenomenology of Religion	3
RELI 2100	Applied Bibliographic Research	1
RELI 2260	Pastoral and Society	3
RELI 2311	History and Theology	3
RELI 2312	History and Theology II	3
RELI 3011	Old Testament I	3
RELI 3021	New Testament I	3
RELI 3034	Spirituality	3
RELI 3065	Christian Ethics	3
RELI 3220	Religious Organizations	3
RELI 3313	History and Theology III	3
RELI 3337	Religion in Latin America	3
RELI 397_	Special Topics	3
RELI 4100	Christian Education	3
RELI 4200	Analysis of Religious Discourse and Liturgy	3
RELI 4300	Christian Education Curriculum	3
RELI 4353	Philosophy of Religion	3
EDUC 2021	History and Philosophy of Education	3
EDUC 2031	Developmental Psychology	3

Minor in Biblical Studies

The minor gives interested students the opportunity to acquire a basic preparation in the area of Biblical Studies. In addition, it fosters the importance of this study for the growth in faith of Christian communities. This offer is suitable for religious leaders who carry out pastoral ministries within Christian communities and other related discipline students.

The Aguadilla, Fajardo and Metropolitan campuses are authorized to offer this minor.

Requirements for the Minor in Biblical Studies - 27 credits

Courses for the Minor in Biblical Studies

RELI 2020	Introduction to the Bible	3
RELI 2100	Applied Bibliographic Research	1
RELI 2103	Biblical Study Methodology	2
RELI 3011	Old Testament I	3
RELI 3012	Old Testament II	3
RELI 3021	New Testament I	3
RELI 3022	New Testament II	3
RELI 4350	Beginnings of Christian Thought	3
RELI 4355	Introduction to the Hermeneutics	3
RELI 4360	Biblical Historiography	3

Minor in Practical Theology

This minor gives interested students the opportunity to acquire a basic preparation in the area of Practical Theology. This is distinguished by providing an interdisciplinary and ecumenical approach in the training of pastoral leaders in their ministerial performance. In addition, it fosters a critical reflection on the action of Christian communities in today's world. This offer is suitable for religious leaders who carry out pastoral ministries within faith communities.

The Aguadilla, Fajardo and Metropolitan campuses are authorized to offer this minor.

Requirements for the Minor in Practical Theology - 21 credits

Courses for the Minor in Practical Theology

RELI 2020	Introduction to the Bible	3
RELI 2100	Applied Bibliographic Research	1
RELI 2103	Biblical Study Methodology	2

RELI 2200	Introduction to Practical Theology	3
RELI 2230	Preaching	3
RELI 2240	Ecclesiastical Administration	3
RELI 2250	Introduction to Pastoral Care	3
RELI 2260	Pastoral and Society	3

Tourism (AS)

The Associate of Science Degree in Tourism with a major in Tour Guide studies principles, concepts and practice of the tourism industry and related areas. This degree is designed for individuals capable of communicating in English and Spanish and who wish to pursue a career in the tourism industry as well as for those with experience in this field who aspire to positions at a supervisory level.

Tourist Guide majors will develop skills in the following areas: tourism planning and development, excursion promotion and sales, and others. In order to practice the profession in Puerto Rico, students must pass a validation examination to obtain a Tour Guide license from the Puerto Rico Tourism Company.

The student must pass the required core and concentration courses with a minimum grade of C.

The Fajardo Campus is authorized to offer this Program.

Competencies Profile of Graduates

The Program is designed to develop the competencies that will enable students to:

Knowledge

1. Know the theoretical and practical foundations of tourism.

2. Know the foundations of the history culture, traditions and tourist attractions of the place where the person is going to serve as tour guide.

3. Know the methods and techniques to handle tourist industry problems.

Skills

1. Design strategies that promote and attend to the needs of tourist development.

2. Promote activities that obligate the professional development of a tour guide.

3. Apply techniques of tourist promotion.

4. Apply the ethical responsibility in the exercise of their functions.

5. Adapt their performance to the interests and needs of the group and to the characteristics of the place where the activity is developed.

6. Demonstrate effective communication skills, including the use of information technology.

7. Design and apply new work technologies.

Attitudes

1. Demonstrate an ethical position committed to the development of practices and techniques that make the professional performance of the tour guide possible.

2. Appreciate the respect and protection of the natural and cultural heritage.

Requirements for Admission to the Internship

In order to be admitted to the Tour Guide Internship, students must have a minimum grade point average of 2.50 in the core courses and major courses and must have authorization from the Department Director.

Graduation Requirements

In addition to the regulations established in the General Catalog, students should have a minimum grade point average of 2.5 in the major.

Requirements for the Associate of Science Degree in Tourism with a Major in Tour Guide

General Education Requirements	24 credits
Core Course Requirements	19 credits
Major Requirements	21 credits
Total	64 credits

General Education Requirements - 24 credits

GESP	Spanish - Select 6 credits from the GESP category	6
GEEN	English - Select 6 credits from the GEEN category	6
GEP-GECF 1010	Introduction to the Christian Faith	3
GEP-GEIC 1010	Information and Computing Technologies	3
GEP-GEMA 1200	Fundamentals of Algebra	3

GEP-GEHS 2010	Historical Process of Contemporary Puerto Rico Or	3
GEP-GEEC 2000	Entrepreneurial Culture	3

Core Course Requirements - 19 credits

TURI 1020	Fundamentals of Tourism	3
TURI 2000	Tourism Legislation	3
TURI 2060	Tourist Marketing	3
TURI 2200	Culture and Tourist Destinations of Puerto Rico	3
ACCT 1161	Introduction to Financial Accounting	4
BADM 1900	Fundamentals of Business Management	3

Major Requirements - 21 credits

TURI 1039	Communication Skills and Interpretation Techniques	3
TURI 1050	Tourism Guide	3
TURI 1201	Natural Resources Interpretive Guide	3
TURI 2021	Tourism Geography of the Caribbean	3
TURI 2040	Designing and Planning of Tourism Excursions	3
TURI 2201	Tourism Adventure Guide	3
TURI 2913	Practice in Tour Guide	3

Tourism Management (BBA)

The Bachelor of Business Administration Degree with a major in Tourism Management will develop professionals capable of administering, developing and serving in tourist destinations, such as, zones, areas, towns and communities in tourist areas and their dependencies.

This program enables students to apply the concepts, principles and techniques required for the effective administration of tourism businesses. The major in tourism administration is for those students who wish to develop professionally in tourism areas, such as; government, private companies, their own businesses and tourist facilities like hotels, restaurants and others. They will be able to work in areas of consulting, planning and zoning of tourism areas, as well as in the hospitality industry, trips and excursions.

Students must pass the required core and major courses with a minimum grade of C.

This Program is certified by the UNWTO of the World Tourism Organization (http://themis.unwto.org).

The Barranquitas and Fajardo campuses are authorized to offer this Program.

Competencies Profile of Graduates

The student graduated from the Tourism Program will demonstrate the following competences that will allow him to offer quality services in the Tourism industry:

Knowledge

Demonstrate knowledge and understanding of:

1. the basic concepts, theory and operation of the tourist administration and its dependencies.

2. the needs of the clients to satisfy them to the maximum offering a good service and of quality.

3. the viability for the development of hotels and apply the basic functions of its administration.

4. the laws governing tourism businesses in Puerto Rico, as well as the importance of compliance with them for the success of the company in which they work.

5. the culture of Puerto Rico based on tourism and its use for the creation of new destinations.

6. the theory of sustainability in tourism in the areas of professional development.

Skills

1. Manage computerized reservation systems efficiently and productively.

2. Plan, develop and evaluate the viability of tourism and hotel projects in the country.

3. Apply marketing techniques based on tourism and the service industry.

4. Manage natural and ecological resources based on the sustainable development of tourism.

5. Design successful tourist destinations based on its policies, planning and development.

6. Apply the basic functions for the reservation and purchase of tourist services.

7. Design and plan large and small events, as well as apply the functions of the banquet and conventions area.

8. Direct and offer the service to visitors with efficiency, courtesy and quality.

Attitudes

1. Base your practice and professional development based on ethical and moral aspects.

2. Demonstrate commitment to your professional development.

Requirements for the Bachelor of Business Administration Degree with a Major in Tourism Management

General Education Requirements	48 credits
Core Course Requirements	38 credits
Major Requirements	36 credits
Elective Courses	3 credits
Total	125 credits

General Education Requirements - 48 credits

Forty-eight (48) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees." Students in this Program will take GEMA 1200 in the Basic Mathematical Skills category.

Core Course Requirements - 38 credits

ACCT 1161	Introduction to Financial Accounting	4
ACCT 1162	Introduction to Managerial Accounting	4
BADM 1900	Fundamentals of Business Management	3
BADM 3900	Information Systems in Organizations	3
BADM 4300	Managerial Economics	3
FINA 2101	Corporate Finance I	3
MAEC 2140	Fundamentals of Quantitative Methods	3
MAEC 2211	Principles of Microeconomics	3
MAEC 2212	Principles of Macroeconomics	3
MAEC 2221	Basic Statistics	3
MAEC 2222	Managerial Statistics	3
OMSY 3030	Business Communication in Spanish Or	3
OMSY 3040	Business Communication in English	3

Major Requirements - 36 credits

TURI 1020	Fundamentals of Tourism	3

TURI 1200	Tourist Quality and Services	3
TURI 1900	Hotel and Accommodation Management	3
TURI 2000	Tourism Legislation	3
TURI 2060	Tourist Marketing	3
TURI 2200	Culture and Tourist Destinations of Puerto Rico	3
TURI 3010	Ecotourism and Sustainable Tourism	3
TURI 3210	Planning and Tourist Development	3
TURI 3220	Trip Reservation System	3
TURI 3230	Accommodations Department Administration	3
TURI 4400	Administration and Organization of Groups and Conventions	3
TURI 4910	Practicum in Tourism Administration	3

Credit may be granted for the internship (TURI 4910) to students who have had a satisfactory work experience and who apply for it in writing to the director of the academic department. This credit will be subject to the following:

1. Students have been working full-time in a company for a minimum of two consecutive years within the three-year period immediately prior to the date of their request.

2. Students submit a certification and letter from their employer or the Human Resources Office of their place of employment which specifies:

    a. Years of experience.

    b. Period of the time employed.

    c. Position or positions held.

    d. Job description.

    e. Copies of evaluations received.

    f. Any other evidence of their professional performance during their employment.

3. Students pay 50% of the tuition costs of the internship course for which they are requesting credit.

The experience recognized by the University corresponds to the requirement for the degree that the student hopes to obtain from the Institution.

Minor in Tourism Management

Requirements for the Minor in Tourism Management - 21 credits

Courses for the Minor in Tourism Management

The minor concentration in Tourism Administration trains the student to apply the concepts, principles and techniques required for the effective management of Tourism Companies. This concentration is for those students who wish to perform professionally in the areas of tourism, such as; government, companies, SMEs and tourist facilities such as hotels, restaurants and others. You can work in areas of consultancies, planning and zoning of tourist areas, as well as in the hospitality industry, travel and excursions.

TURI 1020	Fundamentals of Tourism	3
TURI 1200	Tourist Quality and Services	3
TURI 2000	Tourism Legislation	3
TURI 2060	Tourist Marketing	3
TURI 2200	Culture and Tourist Destinations of Puerto Rico	3
TURI 3210	Planning and Tourist Development	3
TURI 4400	Administration and Organization of Groups and Conventions	3

Toxicology (BS)

Toxicology (BS)

The Bachelor of Science in Toxicology aspires to develop professionals from a multidisciplinary perspective. It focuses on the study of Sciences in Toxicology and scientific research with the purpose of seeking solutions to problems in the field of toxicology. It promotes the integral development of the student and expands their cognitive and creative capacities to perform in the different branches of toxicology. It is designed so that the graduate can continue graduate studies in the area of natural sciences.

The student must pass the required core and concentration courses with a minimum grade of C.

The Aguadilla Campus is authorized to offer this program.

Competencies Profile of Graduates

The Bachelor of Science in Toxicology is designed to develop in the student the necessary competencies in the field of Toxicology. The competencies to be developed are:

Knowledge

Demonstrate knowledge and understanding:

1. the content of the toxicological context, cellular and molecular biology, biochemistry, pharmacology, immunology and bioinformatics related to toxicology.

2. the techniques applied in toxicology to solve problems of toxic effects in organisms in the occupational and environmental branch and in risk analysis.

3. the technical vocabulary inherent in the field of toxicology to communicate effectively with the scientific, professional and academic communities.

4. the theoretical bases that allow the identification and detection of toxicological hazards that damage the organism.

Skills

1. Design and carry out experimental procedures to study toxicological events and solve technological or environmental problems.

2. Analyze the results obtained, in both adverse and favorable effects, produced by chemical substances on organisms and ecosystems.

3. Carry out scientific research to identify toxicological hazards, establish security measures, laws and regulations that protect society in general.

4. Write reports in the format of scientific publications to present and disseminate research results.

Attitudes

1. Demonstrate responsibility, commitment, and leadership when carrying out work in interdisciplinary groups at the professional or community level.

2. Demonstrate responsibility towards self-learning and updating of knowledge around the discipline of toxicology.

3. Integrate the ethical and moral values, as well as the laws and regulations established for the use and management of knowledge of toxicology.

Requirements for the Bachelor of Science in Toxicology

General Education Requirements	42 credits
Core Course Requirements	43 credits
Major Requirements	32 credits
Electives Courses	3 credits
Total	120 credits

General Education Requirements - 42 credits

Forty-two (42) credits are required as explained in the General Education Program Requirements section. Students of the BS in Toxicology program will be exempted from the GEST 2020 and 2030 courses in the Scientific and Technological Context category and GEHP 3000 in the Health and Quality of Life category.

Core Course Requirements - 43 credits

CHEM 1111	General Chemistry I	4
CHEM 2212	General Chemistry II	4
CHEM 2221	Organic Chemistry I	4
CHEM 2222	Organic Chemistry II	4
CHEM 3320	Analytical Chemistry	4
CHEM 4220	Biochemistry	4
MATH 1500	Precalculus	5
MATH 2100	Introduction to Probability and Statistics	3
MATH 2250	Calculus for Biology and Environmental Sciences	3
PHYS 3001	General Physics I	4
PHYS 3002	General Physics II	4

Major Requirements - 32 credits

TOXI 1101	Biological Foundations of Toxicology I	3
TOXI 1102	Methods in Toxicology I	1
TOXI 1120	Biological Foundations of Toxicology II	3
TOXI 2210	Introduction to Toxicology	3
TOXI 2220	Methods in Toxicology II	1
TOXI 2230	Introduction to Pharmacology	3
TOXI 3000	Genetic Toxicology	3
TOXI 3010	Clinical Toxicology	3
TOXI 3603	Environmental Toxicology and Risk Assessment	3
TOXI 3605	Public Health for Toxicologists	3
TOXI 4750	Molecular Toxicology	3
TOXI 4751	Methods in Toxicology III	1
TOXI 4910	Practice	2

Minor in Toxicology

The Minor in Toxicology is designed to provide the Living Sciences student with a multidisciplinary approach with the purpose of seeking solutions to current problems in the field of chemical safety, health and the environment. It complements the student's competencies to continue professional studies in Toxicology, Medicine, Pharmacy, Environmental Sciences, Environmental Health, Industrial Hygiene, Biotechnology and Forensic Sciences. Students who come from other disciplines must have approved the courses GEMA 1200, MATH 1500, CHEM 1111 and CHEM 2212 with a minimum grade of C. Students of the BS in Toxicology may substitute the courses TOXI 1101 and TOXI 1102 for the prerequisites of BIOL 1102.

The Aguadilla Campus is authorized to offer this minor.

Requirements for the Minor in Toxicology - 23 credits

Courses for the Minor in Toxicology

TOXI 1101	Biological Foundations of Toxicology I	3
TOXI 1102	Methods in Toxicology I	1
TOXI 1120	Biological Foundations of Toxicology II	3
TOXI 2210	Introduction to Toxicology	3
TOXI 2220	Methods in Toxicology II	1
TOXI 2230	Introduction to Pharmacology	3
TOXI 3000	Genetic Toxicology	3
TOXI 3010	Clinical Toxicology	3
TOXI 3603	Environmental Toxicology and Risk Assessment	3

Ultrasound Diagnostic (AAS)

Program description

The Associate Degree in Applied Sciences in Ultrasound Diagnostic will develop competent health professionals in the preparation of quality images that support the diagnosis and treatment of patients. It includes a base of scientific knowledge and based on concepts and principles of natural sciences and ultrasound skills in the areas of obstetrics, gynecology, abdominal and superficial parts. Through clinical experiences, the program develops skills in handling specialized equipment and highly advanced technology.

The Aguadilla Campus is authorized to offer this program.

Program Goals

1. Contribute to the development of professionals with general skills in the field of ultrasound and imaging modalities.

2. Promote the integration of research and use of advanced diagnostic ultrasound technology to improve practice.

3. Promote ethical-legal practice and respect for diversity in Diagnostic Ultrasound professionals.

4. Develop competent ultrasound technologists capable of complying with the regulations of their profession.

Program Objectives

1. Train professionals in the concepts of structure and function of the organs of the human body.

2. Apply critical thinking and problem-solving skills in their practice as diagnostic ultrasound technologists.

3. Develop the necessary skills to perform functions and responsibilities within the standards of practice established for ultrasound technologists.

4. Promote professional values and attributes so that they can exercise a high level of ethical-legal conduct with patients and other members of the interdisciplinary health team.

5. Integrate research and technological advances into practice in a way that allows for a safer and more assertive diagnosis.

Competencies Profile of the Graduate

The Program is designed to develop the skills that allow the student to be prepared to work in various settings such as: general and specialized hospitals, medical offices, specialized clinics, diagnostic imaging centers, educational institutions, medical equipment companies and industries, among others.

Knowledge

1. Recognize the most common pathologies and associated terminology.

2. Recognize the procedures to be followed during a diagnostic ultrasound study.

3. Recognize existing laws that protect patient rights, privacy, and patient confidentiality.

Skills

1. Use established ultrasound techniques to obtain the

best diagnostic study.

2. Evaluate the quality of the images obtained according to the standards of the profession so that the doctor can use them in the diagnostic process.

3. Effectively manage new technology ultrasound equipment, with its required care and maintenance.

4. Write reports in accordance with the ultrasound quality protocol.

Attitudes

1. Appreciate the importance of observing the regulations of the profession.

2. Recognize the importance of communication, respect and empathy.

3. Demonstrate ethical-legal behavior in performing diagnostic ultrasound studies.

Admission Requirements

All students who aspire to be admitted to the Associate Degree in Applied Sciences in Diagnostic Ultrasound must meet the following specific requirements:

1. Be admitted to the Interamerican University of Puerto Rico, Aguadilla Campus.

2. Submit completed application for admission.

3. Submit official and updated transcript of recent study credits.

4. Have a GPA of 2.50 or higher.

5. You must present:

   a. Two (2) 2x2 photos

   b. Health certificate

   c. Evidence Hepatitis B, Varicella and Influenza Vaccines.

   d. Negative Criminal Record Certificate

Each of these pieces of evidence must be presented prior to starting the second semester of the first year of the program and must be valid for 6 months at the beginning of each semester. This applies to all students enrolled in the Program. The student is responsible for complying with any other requirement requested or required by the agencies or clinical affiliations that serve as practice

centers for the Program.

The student must comply with those non-academic requirements related to the fulfillment of the essential functions of the discipline. These appear in section 504 of the Vocational Rehabilitation Act of 1973. Therefore, given the job requirements and functions of the ultrasound technologist, the student must be aware that he will occasionally have to lift and move heavy objects. All students with a history of physical limitations will be advised to consult with their doctor prior to enrollment.

Student program retention Requirements

1. Comply with the Satisfactory Academic Progress Standards established in the current General Catalog of the Inter-American University of Puerto Rico.

2. The student will attend their practice center or clinical affiliation as scheduled by the coordinators and director of the program.

3. If a student obtains a grade below C on two occasions in the same course or in two concentration courses, they will be submitted to a probationary period of no more than one academic year. The student, who, during the probationary period, does not reach the minimum grade of C required or was suspended for punishable conduct will not continue in the Program and may choose to apply for admission to another study program.

4. The student who has three (3) or more days of absence per semester in a clinical practice course, without a reasonable justification, leads to the withdrawal of this.

5. They must meet all the requirements of the Practice Center to enroll in the USDX 2017 Practice in Ultrasound I, USDX 2021 Practice in Ultrasound II, USDX 2031 Practice in Ultrasound Ill and USDX 2140 Integrative Workshop courses.

Graduation Requirements

To complete the Associate Degree in Applied Sciences in Ultrasound Diagnostic, the candidate must meet the requirements at the lnter-American University.

1. Comply with all the norms and graduation requirements for the associate degree established in the General Catalog of the Inter-American University of Puerto Rico.

2. Pass all the academic requirements of the General

Education Program and those specific to the associate degree in Applied Sciences in Diagnostic Ultrasound.

3. Obtain a general academic index no less than 2.50 and concentration no less than 2.00 points.

4. Obtain a minimum grade of B in the concentration practice courses USDX 2017 Practice in Ultrasound I, USDX 2021 Practice in Ultrasound II, USDX 2031 Practice in Ultrasound Ill and USDX 2140 Integrative Workshop.

REQUIREMENTS FOR ASSOCIATE DEGREE IN APPLIED SCIENCES IN ULTRASOUND DIAGNOSTIC

General Education Program Requirements	24 credits
Major Requirements	43 credits
Total	67 credits

General Education Requirements - 24 credits

GESP	Spanish - Select 6 credits from the GESP category	6
GEEN	English - Select 6 credits from the GEEN category	6
GEP-GEMA 1200	Fundamentals of Algebra	3
GEP-GECF 1010	Introduction to the Christian Faith	3
GEP-GEIC 1010	Information and Computing Technologies	3
GEP-GEEC 2000	Entrepreneurial Culture	3
GEP-GEHS 2010	Historical Process of Contemporary Puerto Rico	3

Major Requirements - 43 credits

USDX 1000	Introduction to the Principles and Protocols of Diagnostic Ultrasound	3
USDX 1010	Anatomy and Physiology in Ultrasound	3
USDX 1110	Patient Care in Diagnostic Ultrasound	2
USDX 2010	Basic Physics in Diagnostic Ultrasound	2
USDX 2011	Intermediate Physics in Diagnostic Ultrasound	3
USDX 2015	Abdomen and Pelvis	3
	Ultrasound Procedure and Evaluation	
USDX 2016	Abdomino-Pelvic Pathology	3
USDX 2017	Practice in Ultrasound I	3
USDX 2020	Pathology in Obstetrics and Gynecology	3
USDX 2022	Ultrasound Procedure and Evaluation in Obstetrics and Gynecology	3
USDX 2030	Procedure and Evaluation of Ultrasound in Superficial Anatomy	3
USDX 2031	Practice in Ultrasound III	3
USDX 2032	Pathology in Superficial Anatomy	2
USDX 2040	Integrating Workshop	2

Veterinary Technician (AAS)

The program of Associate Degree in Applied Sciences in Veterinary Technician aims to train professionals who can assist the veterinarian in the procedures of exploration, treatment and pharmacology, prevention and diagnosis of diseases in animals. The graduate will be able to perform other tasks of assistance to domestic animals, in the emergency areas, operations room and first aid, as well as the techniques of taking images and laboratory tests. The program is designed for students who wish to work as assistants in clinics, hospitals, farms and research centers with animals or any other place where the veterinarian needs your assistance.

The Guayama Campus is authorized to offer this program.

Competencies Profile of Graduates

The Program is designed to develop the competences that allow the student to:

Knowledge

Demonstrate knowledge and understanding:

1. of the offer of veterinary care in areas such as clamping techniques, animal revision, imaging and laboratory tests, among other functions under the supervision of the veterinarian.

2. of the processes of evaluation of emergencies and surgical interventions.

3. of the use of equipment and technology related to the treatment and care of the patient.

4. of the care that should be offered to the sick patient,

operated or hospitalized.

5. of the correct evaluation of the patient's data.

6. to identify the educational needs of animal owners to provide education about their care.

Skills

1. Apply the techniques and procedures to assist the veterinarian in the provision of patient care and treatment of diseases.

2. Demonstrate skill in the use and management of equipment, technological means and clinical procedures.

3. Evaluate the patient's condition and their needs for treatment, lodging, nutrition, dental work, among others.

4. Use effective communication techniques and critical judgment to assist the veterinarian in the provision of patient care.

5. Apply safety rules and universal protection measures when offering patient care.

Attitudes

1. Apply ethical and legal principles in the performance of the functions of the veterinary technician.

2. Demonstrate an attitude of responsibility and commitment in the practice of a veterinary technician.

3. Value the importance of keeping their knowledge updated.

Admission Requirements

In addition to the admission requirements established in this Catalog, students in this Program must:

- Submit evidence of vaccination against the rabies virus on or before the start of the second academic semester.

Requirements for the Associate Degree in Applied Sciences in Veterinary Technician

General Education Requisites	24 credits
Core Requirements	8 credits
Major Requirements	33 credits
Total	65 credits

General Education Requirements- 24 credits

Twenty-four (24) credits are required as established in the General Catalog in the General Education Requirements section for Associate Degrees.

Core Requirements - 8 credits

BIOL 1101	General Biology I	3
BIOL 1103	Biology Skills Laboratory I	1
CHEM 1111	General Chemistry I	4

Major Requirements - 33 credits

VETC 1100	Introduction to Veterinary Sciences	2
VETC 1120	Animal Anatomy and Physiology	3
VETC 2200	Farm Animals	3
VETC 2201	Parasitology and Microbiology	3
VETC 2202	Clinical Laboratory	2
VETC 2210	Pharmacology and Toxicology	3
VETC 2213	Laboratory Animals	2
VETC 2970	Seminar	1
VETC 2220	Veterinary Nursing	3
VETC 2240	Radiology	3
VETC 2250	Anesthesia and Surgery	3
VETC 2255	Common Diseases in Domestic Animals	3
VETC 2910	Veterinary Technician Practice	2

Veterinary Technology (BS)

The Bachelor of Science in Veterinary Technology program aims to train professionals who can assist the veterinarian in the procedures of exploration, treatment and pharmacology, prevention and diagnosis of diseases in animals. The graduate will be able to perform other tasks of assistance to domestic animals, research and farm, in the emergency areas, operating room and first aid, as well as imaging techniques and laboratory tests. The program is designed for students who wish to work as veterinary technologists in clinics, hospitals, farms and animal research centers or any other place where the veterinary doctor needs their assistance. The student who cannot complete the baccalaureate will have the option of completing an Associate Degree in Veterinary Technician.

The Guayama Campus is authorized to offer this program.

Competencies Profile of Graduates

The focus of the mission and philosophy of the proposed curriculum frame a vision of the graduate with a theoretical and practical education that enables him to perform successfully both professionally and personally. The Bachelor of Science in Veterinary Technology has the educational goal of achieving a graduate with the knowledge, skills and attitudes that enable him to be employed and at the same time offer a good service to the society to which he belongs. It is intended to form a well-educated and competent professional, responsible and respectful of himself, his profession and society. The graduate, as a professional in the field of Veterinary Technology, must be able to manifest the following general knowledge, skills and attitudes:

Knowledge

1. Demonstrate knowledge in offering veterinary care in areas such as restraint techniques, review of the animal, taking images and laboratory tests, among other functions under the supervision of the veterinarian.

2. Develop knowledge to assist the physician in the process of evaluating emergencies and surgical interventions.

3. Know the use of equipment and technologies related to the treatment and care of the patient.

4. Demonstrate knowledge when offering care to the sick, operated or hospitalized patient.

5. Evaluate patient data correctly.

6. Identify the educational needs of animal owners to provide education on their care.

7. Analyze the safety and quality of consumer products during transformation processes using hygiene controls, inspection requirements, and production and processing technology.

8. Integrate competencies related to customer service and marketing strategies, without forgetting leadership and teamwork.

9. Generate procedures that promote the safe and effective care of animals used for research.

10. Know the clinical applications, use and management of modern diagnostic imaging

techniques.

Skills

1. Apply the techniques and procedures to assist the veterinarian in providing patient care and treating illnesses.

2. Demonstrate ability in the use and management of equipment, technological means and clinical procedures.

3. Evaluate the patient's condition and their needs for treatment, lodging, nutrition, dental work, among others.

4. Use effective communication techniques and critical judgment to assist the veterinarian in providing patient care.

5. Apply safety rules and universal protection measures when offering patient care and when handling tissues or other materials of biological origin.

6. Master the management and care of the farm animals, the equines and the maintenance of the physical facilities that house them.

7. Develop plans for disease prevention and control measures. Apply the correct techniques to collect, handle and send all types of samples with their corresponding report.

8. Know and apply the rules and procedures required for the care of laboratory animals including euthanasia.

9. Perform basic veterinary clinic administration tasks including marketing and promotion through social networks.

Attitudes

1. Apply ethical-legal principles in the performance of the functions of veterinary technician.

2. Demonstrate an attitude of responsibility and commitment in the practice of veterinary technician.

3. Assess the importance of keeping your knowledge updated according to the new scientific and technological advances of the profession.

4. Comply with the laws and the code of ethics that regulate the profession of veterinary technician.

Admission Requirements

In addition to the admission requirements established in this Catalog, students in this Program must:

- Submit evidence of vaccination against the rabies virus on or before the start of the second academic semester.

Requirements for the Bachelor in Science in Veterinary Technology

General Education Requirements	42 credits
Core Requirements	21 credits
Major Requirements	54 credits
Elective Courses	3 credits
Total	120 credits

General Education Requirements - 42 credits

Forty-two (42) credits are required as explained in the section "General Education Requirements for Bachelors' Degrees." Students are exempt from taking courses from the category Scientific and Technological Context and course GEEC 2000 - Entrepreneurial Culture.

Major Requirements - 54 credits

VETC 1100	Introduction to Veterinary Sciences	2
VETC 1120	Animal Anatomy and Physiology	3
VETC 2200	Farm Animals	3
VETC 2201	Parasitology and Microbiology	3
VETC 2202	Clinical Laboratory	2
VETC 2210	Pharmacology and Toxicology	3
VETC 2213	Laboratory Animals	2
VETC 2970	Seminar	1
VETC 2220	Veterinary Nursing	3
VETC 2240	Radiology	3
VETC 2250	Anesthesia and Surgery	3
VETC 2255	Common Diseases in Domestic Animals	3
VETC 2910	Veterinary Technician Practice	2
VETC 3300	Food Safety and Hygiene	3
VETC 3302	Emergency and Critical Care	4
VETC 3311	Animal Feed and Nutrition	3
VETC 4410	Handling and Care of Equine	4
VETC 4420	Administration of Veterinary Clinics	3
VETC 4910	Practice of Veterinary Technology	3
VETC 4970	Integration Seminar	1

Core Requirements - 21 credits

BIOL 1101	General Biology I	3
BIOL 1102	General Biology II	3
BIOL 1103	Biology Skills Laboratory I	1
BIOL 1104	Biology Skills Laboratory II	1
CHEM 1111	General Chemistry I	4
CHEM 2212	General Chemistry II	4
MATH 1500	Precalculus	5

Videogames and Mobile Applications (AAS)

The Associate Degree in Applied Sciences in Videogames and Mobile Applications aims to train students with attitudes, knowledge and skills in the design and programming processes of applications and videogames for mobile devices. The student will integrate the sciences of multiplatform programming with the art of the design of the essential digital elements in video games. In addition, will develop the cognitive, creative and ethical capabilities necessary to adapt to the changing world of mobile devices.

The Guayama Campus is authorized to offer this Program.

Competencies Profile of Graduates

The mission's approach and philosophy of the proposed curriculum presents a graduate with a theoretical and practical education that will enable him to perform successfully both professionally and personally. The Associate Degree in Applied Sciences in Videogames and Mobile Applications has as an educational goal to achieve a graduate with the knowledge, skills and attitudes to be employed and at the same time offer a good service to the society to which it belongs. It is intended to train, a well-educated and competent, responsible and respectful professional for himself, his profession and society. The graduate, as a professional in the field of Videogames and Mobile Applications, must be able to manifest the following knowledge, skills and attitudes:

Knowledge

Demonstrate knowledge and understanding of:

1. The predominant programming languages for creating applications and videogames for mobile

devices.

2. The theoretical concepts of mathematics and physics present in programming and videogame environments for mobile devices.

3. The techniques of design and creation of digital visual arts.

4. The theoretical foundations of artificial intelligence, two-dimensional and three-dimensional graphics.

Skills

1. Plan strategies for solving problems typical of the discipline of mobile devices.

2. Design and execute application production strategies for mobile devices.

3. Plan and produce applications for mobile devices through outstanding programming platforms in the industry.

4. Design and program video games with interactive entertainment tools with the highest professional recognition.

5. Apply the theoretical concepts of mathematics and physics present in programming and videogame environments for mobile devices.

6. Apply the skills in the design and creation of digital visual arts.

Attitudes

1. Show ethical and legal principles of the profession.

2. Value the importance of good communication and work in multidisciplinary teams.

Requirements of the Associate Degree in Applied Sciences in Videogames and Mobile Applications

General Education Program Requirements	24 credits
Major Requirements	36 credits
Total	60 credits

General Education Program Requirements - 24 credits

Major Requirements - 36 credits

VGMA 1110	Mobile Device Technologies	3
VGMA 1120	Programming Languages	3
VGMA 1130	Digital Visual Arts	3
VGMA 1210	User Interface Design	3
VGMA 1220	Mathematics and Physics for Videogames	3
VGMA 1230	Application Programming I	3
VGMA 2110	Application Programming II	3
VGMA 2120	Digital Development and Narrative	3
VGMA 2130	Videogame Programming	3
VGMA 2210	Cloud Computation	3
VGMA 2220	Artificial Intelligence	3
VGMA 2230	Creative Work	3

Courses

ACCT - Accounting

ACCT 1161 - Introduction to Financial Accounting (4)

Introduction to accounting and its relation with the business environment. Study and application of the accounting system in services and retail companies. Financial statement presentation and its utility in decision making. Discussion of general aspects related to: internal control, assets, liabilities and capital structures. Ethical values and the use of technology are incorporated.

ACCT 1162 - Introduction to Managerial Accounting (4)

Introduction to the fundamentals of managerial accounting as part of the planning, decision making and cost control processes in a company. Construction of budgets and their use in the decision making process. Ethical values and the use of technology are incorporated.

Prerequisite: ACCT 1161.

ACCT 3020 - Managemental Accounting for CPA Candidates (4)

Analysis and application of the foundations of managerial accounting for the certified public accountant examination. Discussion of the concepts of control of costs, construction of budgets and short term decisions in the company. Emphasis in the subjects of variances, the analysis of financial statements and the concept of balance point. Incorporation of ethical values and the use of technology.

Prerequisite: ACCT 2055.

ACCT 3030 - Computerized Systems Applied to Accounting (3)

Application of the computerized programs used in the processes of gathering, analyzing, interpreting, synthesizing and communication of accounting information. Ethical values and the use of tecnology are incorporated.

Prerequisite: GEIC 1010, ACCT 3061.

ACCT 3041 - Puerto Rico Tax System for Individuals (4)

Discussion of the dispositions of the Internal Revenue Code of Puerto Rico and recent legislation related to individual income taxes including the preparation of the required forms. In addition, the tax obligations imposed by state and federal laws to Puerto Rican employers and the legal responsibility of tax specialists are studied. Ethical values and the use of technology are incorporated.

Prerequisite: ACCT 1161.

ACCT 3042 - Tax System of Puerto Rico For Corporations, Partnerships and Other Entities (3)

Discussion and application of the dispositions of the Internal Revenue Code of Puerto Rico and their amendments related to income taxes applicable to corporations, partnerships and other entities. In addition, excise taxes,patents and taxes on property are studied. Ethical values and the use of technology are incorporated.

Prerequisite: ACCT 3041.

ACCT 3055 - Cost Accounting I (4)

Application and analysis of cost accumulation in order to plan, implement and control the operations of the company. The concepts of cost based on the activity, budget and standard cost are included. Ethical values and the use of technology are incorporated.

Prerequisite: ACCT 1161.

ACCT 3061 - Intermediate Accounting I (4)

Application of the accounting cycle. Discussion, analysis, interpretation and application of the national and international accounting conceptual framework. Study and practice of the accounting cycle and the acquisition, classification, valuation and disposition of current and intangible assets. The concepts of professional ethics, international accounting and the use of technology are integrated.

Prerequisite: ACCT 1161.

ACCT 3062 - Intermediate Accounting Ii (4)

Discussion, analysis, interpretation and application of the theoretical and practical aspects of accounting for property, physical plant and equipment, natural resources investments and short and long term liabilities, corporate capital, profit by share and recognition of income for short and long term contracts. The concepts of professional ethics, international accounting and the use of technology are integrated.

Prerequisite: ACCT 3061.

ACCT 3063 - Intermediate Accounting Iii (4)

Discussion, analysis, interpretation and application of theoretical and practical aspects of accounting related to: pensions, rent, corporate income taxes and changes in estimates, accounting principles and correction of mistkes in financial statements. Preparation of complex financial statements and current topics. The concepts of professional ethics, international accounting and the use of technology are integrated.

Prerequisite: ACCT 3062.

ACCT 3085 - Federal Taxes for Individuals (3)

Discussion of the dispositions of the Federal Internal Revenue Code and recent legislation related to individual income taxes, including the preparation of required forms. Discussion of the special dispositions applicable to the residents of Puerto Rico. Ethical values and the use of technology are incorporated.

Prerequisite: ACCT 1161.

ACCT 3086 - Federal Taxes for Corporations, Partnerships and Other Entities (3)

Discussion and application of the dispositions of the Federal Internal Revenue Code related to income taxes applicable to corporations, partnerships and other entities, including the preparation of the required forms. Ethical values and the use of technology are incorporated.

Prerequisite: ACCT 3085.

ACCT 3095 - Business Ethics (3)

Review of the ethical aspects needed in the businesses world. Analysis of outstanding publications of Puerto Rican authors and authors from other countries on this subject. Analysis and application of cases. The codes of ethics of different professionals will be identified and will be compared with the Code of Ethics for Accountants from the United States and other countries.

ACCT 3100 - Special and Current Topics in Financial Accounting (4)

Analysis, interpretation and application of recent changes to accounting principles. Emphasis in advanced concepts of financial accounting. Incorporation of ethical concepts in the profession, international accounting and the use of technology for the Certified Public Accountant examination.

Prerequisite: ACCT 3063.

ACCT 3460 - Accounting for Non Profit Organizations (3)

Discussion and practice of accounting for non profit organizations such as: government, hospitals, universities and other public and private entities. Includes accounting for trusts and estates. Ethical values and the use of technology are incorporated.

Prerequisite: ACCT 3062.

ACCT 3480 - Accounting for Business Combinations and Partnerships (4)

Discussion and practice of the methods of accounting for long-term investments and the business combinations. In addition, it includes accounting for mercantile companies and the reorganization and liquidation of corporations. Ethical values and the use of technology are incorporated.

Prerequisite: ACCT 3062.

ACCT 4010 - Auditing and Ethics for Accountants (4)

Description of the theory, norms and types of audits, the role of the auditor and the different information (opinions). The ethical principles and the legal responsibility of the auditor are discussed. Includes the planning and design of the audit, the evaluation of internal control and risk, substantive and analytical tests and the preparation of reports. Ethical values and the use of the technology are incorporated.

Prerequisite: ACCT 3063.

ACCT 4011 - Planning and Execution of The Audit (3)

Analysis and application of the activities in the planning and execution of an audit, according to the principles and norms of the American Institute of Certified Public Accountants (AICPA). Emphais in the importance of the study of the internal control system of a company, the determination of risk, and the determination and interpretation of audit samples. Incorporation of ethical values, the international standards and the use of technology.

Prerequisite: ACCT 4010.

ACCT 4012 - Norms in The Preparation Of Audit Reports And Verification (3)

Analysis and application of the principles and norms of the American Institute of Certified Public Accountants (AICPA) that an auditor must follow when emitting an audit report or verification. Study of other applicable areas that auditors may undertake. Incorporation of ethical

values, the international standards and the use of technology.

Prerequisite: ACCT 4010.

ACCT 4015 - Forensic Accounting (3)

Describes the role of the forensic accountant in the financial environment. Study of the legal environment, prevention techniques, detection and research of fraud. In addition, the resolution of disputes, litigation services, fraud in financial statements and taxes are discussed. Ethical values and the use of the technology are incorporated.

Prerequisite: ACCT 3063.

ACCT 4020 - Business Law for CPA Candidates (4)

Study of the legal responsibility of the Certified Public Accountants, Contract laws in the United States, the Uniform Code of Commerce (UCC), and the special laws that regulate commerce and work. Ethical values and the use of the technology are incorporated.

Prerequisite: ACCT 3063.

ACCT 4912 - Accounting Internship (3)

Practice in accounting in an organization or company under the supervision of a professor of the discipline. Requires 135 hours of practice.

Prerequisite: Have a minimum average of 3.00 in the accounting major, the approval of the department chair or his representative and have passed the following courses: ACCT 3041, 3063, 3085 and 3030. .

ACCT 4980 - Research in Accounting (4)

Research, interpretation and analysis of case studies related to financial accounting, audit and other topics of accounting. Incorporation of concepts of ethics in the profession, writing, international accounting and the use of technology.

Prerequisite: ACCT 3100, 4011 and 4012.

ACHA - Archeology

ACHA 3501 - Archaeological Materials I (3)

Description of the processes and fundamental methodologies for the interpretation of recovered cultural material from archaeological excavations. Emphasis on the theories and the concepts related to the classification and description used in ceramic, stone, and shell archaeological materials.

Prerequisite: ANTH 1040, 3500.

ACHA 3502 - Archaeological Materials II (3)

Description of the processes and the fundamental methodologies for the interpretation of the recovered cultural material from archaeological excavations. Emphasis on the theories and the concepts related to the classification and description used in archaeological materials in archaefaunal remains, archaebotanical remains, glass, construction materials, metals and plastics.

Prerequisite: ACHA 3501.

ACHA 4000 - Cultural Resources management and Public Archeology (3)

Analysis of the theoretical concepts on which the practice of public archeology and the Administration of Cultural Recursos (MRC) is supported. Review of the national and international legal organizations' norms on archaeological and historical patrimony. Emphasis on the significance of the protection and conservation of the archaeological patrimony as national property.

Prerequisite: ANTH 3600, 3502.

ACHA 4010 - Field Archeology (4)

Application of the techniques and methodologies related to the archaeological field work. Formulation of the work hypotheses to be verified by the evidence recovered in the archaeological deposits. Relation of the theory to the archaeological method for the reconstruction of the historical processes. Requires 30 hours lecture and 90 hours of lab.

Prerequisite: ACHA 4000.

ADEV - Applications Development

ADEV 2500 - Introduction to Cloud Network Management (3)

Study of the basic concepts of cloud computing networks and local networks from an organizational perspective. Study of the different models of TCP / IP and OSI. Discussion of technologies, topologies, equipment, cloud and network security.

Prerequisite: COMP 2120.

ADEV 397_ - Special Topics (3)

Analysis of relevant current issues in the area of

applications development.

Prerequisite: Authorization of the department chair.

ADEV 3070 - Information Systems Project Management (3)

Management of an Information System project. Analysis of the organization, planning and control of information system projects. Study of administration of project schedule and resources. Practice in the use of project management programs. Requires a total of 45 conference / laboratory hours. Requires additional hours in an open laboratory.

Prerequisite: ADEV 3500.

ADEV 3500 - Decision Support System (3)

Analysis of data for intelligent decision making in an organization. Development of a DSS in the managerial and operational phases as support for business planning. Requires a total of 45 conference / laboratory hours. Requires additional hours in an open laboratory.

Prerequisite: COMP 2800.

ADEV 3850 - Customer Relationship Software (CRM) Administration (3)

Study of the interaction between customers, sales, and marketing functions. Use of software for automation and sales promotion. Analysis of data warehouse technologies to add transactional and proportional information to reports. Discussion of dashboards and key indicators of a business. Requires a total of 45 conference / laboratory hours. Requires additional hours in an open laboratory.

Prerequisite: ADEV 3500.

ADEV 4504 - Capstone Project (4)

Development of a practical application development project under the guidance of a faculty member.

Prerequisite: Authorization of the department chair or program coordinator and COMP 3015 and ADEV 3850.

AEST-Reserve Officers Corps Aerospace Studies

AEST 3001 - The Air Force Today (2)

This course is a survey course designed to intriduce students to the United States Air Force and Air Force Reserve Officer Trainig Corps. Featured topics include: mission and organization of the Air Force, officers professionalism, military customs and coutesies, Air Force officer opportunities, group leadership problems, and an introduction to communication skills. Leadership Laboratory is mandatory for Air Force ROTC cadets, and it complements this course by providing cadets with fellowhip experiences. One hour of lecture and one and a half hours of Leadership Laboratory (Corps Training) per week each semester.

AEST 3002 - The Air Force Today (2)

This course is a survey course designed to intriduce students to the United States Air Force and Air Force Reserve Officer Trainig Corps. Featured topics include: mission and organization of the Air Force, officers professionalism, military customs and coutesies, Air Force officer opportunities, group leadership problems, and an introduction to communication skills. Leadership Laboratory is mandatory for Air Force ROTC cadets, and it complements this course by providing cadets with fellowhip experiences. One hour of lecture and one and a half hours of Leadership Laboratory (Corps Training) per week each semester.

AEST 3011 - The Air Force Way (2)

This course is a survey course designed to facilitate the transition from Air Force ROTC cadet to Air Force ROTC candidate. Featured topics include: Air Force heritage, Air Force leaders, Quality Air Force, an introduction to ethics and values, introduction to leadership, group leadership problems. And continuing application of communication skills. Leadership Laboratory is mandatory for Air Force ROTC cadets, and it complements this course by providing cadets with their first opportunity for applied leadership experiences. One hour of lecture and one and a half hours of Leadership Laboratory (Corps Training) per week each semester. discussed in class.

AEST 3012 - The Air Force Way (2)

This course is a survey course designed to facilitate the transition from Air Force ROTC cadet to Air Force ROTC candidate. Featured topics include: Air Force heritage, Air Force leaders, Quality Air Force, an introduction to ethics and values, introduction to leadership, group leadership problems. And continuing application of communication skills. Leadership Laboratory is mandatory for Air Force ROTC cadets, and it complements this course by providing cadets with their first opportunity for applied leadership experiences. One hour of lecture and one and a half hours of Leadership Laboratory (Corps Training) per week each semester. discussed in class.

AEST 4001 - Air Force Leadership and Management (4)

This course is a study of leadership and quality management fundamentals, professional knowledge, Air Force doctrine, leadership ethics, and communication skills required of an Air Force junior officer. Case studies are used to examine Air Force leadership and management situation as a means of demonstrating and exercising practical application of the concepts being studied. A mandatory Leadership Laboratory complements this course by providing advanced leadership experiences in officer-type activities, giving students the opportunity to apply leadership and management principles of this course. Three hours of lecture and one and a half hours of Leadership Laboratory (Corps Training) per week each semester.

AEST 4002 - Air Force Leadership and Management (4)

This course is a study of leadership and quality management fundamentals, professional knowledge, Air Force doctrine, leadership ethics, and communication skills required of an Air Force junior officer. Case studies are used to examine Air Force leadership and management situation as a means of demonstrating and exercising practical application of the concepts being studied. A mandatory Leadership Laboratory complements this course by providing advanced leadership experiences in officer-type activities, giving students the opportunity to apply leadership and management principles of this course. Three hours of lecture and one and a half hours of Leadership Laboratory (Corps Training) per week each semester.

AEST 4011 - Preparation for Active Duty (4)

This course examines the national security process, regional studies, advanced leadership ethics, and Air Force doctrine. Special topics of interest focus on the military profession, military justice, civilian control of the military, preparation for active duty, and current issues affecting military professionalism. Within this structure, continued emphasis is given to refining communication skills. An additional Leadership Laboratory complements this course by providing advanced leadership experiences, giving students the opportunity to apply the leaderhip and management principles of this course. Three hours of lecture and one and a half hours of Leadership Laboratory (Corps Training) per week each semester.

AEST 4012 - Preparation for Active Duty (4)

This course examines the national security process, regional studies, advanced leadership ethics, and Air Force doctrine. Special topics of interest focus on the military profession, military justice, civilian control of the military, preparation for active duty, and current issues affecting military professionalism. Within this structure, continued emphasis is given to refining communication skills. An additional Leadership Laboratory complements this course by providing advanced leadership experiences, giving students the opportunity to apply the leaderhip and management principles of this course. Three hours of lecture and one and a half hours of Leadership Laboratory (Corps Training) per week each semester.

AGRO - Agronomy

AGRO 1100 - Edaphology (3)

Examination of the properties, structure, fertility, the organisms present and the process of contamination and degradation of the soil. Integration of the models in the sustainable planning of land use, as well as the preparation of the soil for planting and the possible mechanisms of control, treatment and recovery.

AGRO 1120 - Phytopathology (3)

Description of the phytopathogens as a basis for improving the control of diseases that affect the most economically important crops. Diagnosis and eradication of diseases through the identification of their symptoms, the agents that cause them and the ability to use integrated strategies for sustainable control. It requires 45 hours of lecture and 45 hours of laboratory.

Prerequisite: BIOL 1100.

AGRO 1130 - Animal Welfare (3)

Explanation of the concept of well-being, the factors that condition it and how it is determined. Recognition of the physical well-being of animals regarding accommodation, treatment, care and the euthanasia process. Awareness of respect, ethical and moral treatment of animals and the social and legal aspects related to animal welfare.

AGRO 2200 - Agricultural Health and Safety (3)

Introduction to the fundamental concepts of occupational health and safety in the agricultural industry. Identification of the environmental factors and hazards related to the equipment and to the chemical products, including their effects and their control. Discussion of legislation and practical strategies to identify hazards and assess risks.

AGRO 2211 - Crop Production I (4)

Discussion of the fundamentals of the production of agricultural crops and the factors that directly influence

their development. Identification of the morphological, environmental, reproductive characteristics and the sowing and cultivation techniques that are of greater economic importance. It requires 45 hours of lecture and 45 hours of laboratory.

Prerequisite: AGRO 1120.

AGRO 2212 - Crop Production II (4)

Development of the theoretical and practical foundations on the different cultivation processes, as well as the industries derived from the most economically important crops. Identification of the factors that affect agricultural systems. It requires 45 hours of lecture and 45 hours of laboratory.

Prerequisite: AGRO 2211.

AGRO 2220 - New Agricultural Trends (4)

Description of the characteristics, advantages and disadvantages of the different cultivation techniques without soil in the production of agricultural crops. Techniques for the preparation and management of substrates and nutrient solutions, irrigation systems and the identification and control of the phytosanitary status of crops. Discussion of alternatives to optimize crop production in organic farming systems. It requires 45 hours of lecture and 45 hours of laboratory.

AGRO 2225 - Food and Animal Nutrition (3)

Identification of the basic principles of nutrition and feeding of domestic animals and exotic species. Study of your food and nutritional needs, the detection and treatment of abnormalities or diseases. Evaluation of food control in the different stages of the animal's life.

Prerequisite: BIOL 1100.

AGRO 2230 - Animal Production I (3)

Examination of the basic concepts of animal production, with emphasis on the techniques of care, reproduction and raising of the best breeds of domestic animals in order to obtain a good production. Description of the main aspects and attributes of the quality of derived products.

AGRO 2231 - Animal Production II (3)

Study of the essential factors that affect the breeding, reproduction, nutrition and production of farm animals. Handling of food products and their derivatives. Integration of good agricultural practices in agricultural production.

Prerequisite: AGRO 2230.

AGRO 2240 - Agricultural Waste (3)

Identification of the most appropriate strategies for the use, management and disposal of agricultural residues to minimize soil and water contamination by chemical and organic products. Comparison of alternatives for reducing the production of waste at the source and its transformation into organic products.

AGRO 2250 - Agricultural Enterprise (3)

Discussion of the administrative and commercial strategies of the technical and practical aspects of marketing and commercialization of agricultural products. Identification of the main problems faced by this market and their possible solutions. Evaluation of the possibility of supplying the local market and the export of its products.

AGRO 2910 - Practice in Agricultural Technology (2)

Experience for the acquisition, consolidation and integration of skills and competencies that correspond to the competencies profile of the graduates. It requires 120 hours of supervised practice in agricultural production systems. Prerequisite: Authorization from the director or coordinator of the Program.

Prerequisite: Authorization from the program's chair or coordinator. .

AGRO 3010 - Agricultural Machinery and Mechanization (4)

Introduction to the fundamental principles of the use and management of agricultural equipment, tools and machinery. Development of abilities and skills in the use and maintenance of agricultural machinery, especially in the execution of tasks that may affect the environment. It requires 45 hours of lecture and 45 hours of laboratory.

AGRO 3015 - Agrobusiness Management (3)

Planning, organization, administration and control of agrobusinesses. Study of the organization and management strategies of agricultural production systems. Evaluation of the results to be used in decision making considering economic and human resources, financial evaluation and materials, techniques and production processes.

Prerequisite: AGRO 2250.

AGRO 3020 - Agricultural Biotechnology (3)

Introduction to the fundamental concepts of agricultural biotechnology as a basis for improving the genetic aspects and characteristics of organisms and the derivatives

obtained from said organisms. Discussion of techniques for the improvement of transgenic crops and animal genetics. Comparison of conventional techniques and modern genetic engineering techniques. It requires 30 hours of lecture and 15 hours of laboratory.

AGRO 3025 - Challenges Due to Climate Change (3)

Discussion of the effects, opportunities and threats of climate change on cultivation, food production and food security. It includes the discussion of the use of natural resources, strategies and correct practices in agricultural production to face climate change in order to achieve sustainable development.

AGRO 4010 - Soil and Water Conservation (3)

Evaluation of preventive and corrective practices for soil and water conservation. Analysis of the composition of soils and its main components, including the improvement of natural resources.

AGRO 4015 - Pasture and Forage Management (3)

Study of pasture and forage species and their economic impact on the agricultural industry. Description of the processes for sowing, cultivating and managing pastures and forages.

AGRO 4020 - Project Design and Evaluation (3)

Application of management principles and strategies in the design and evaluation of agricultural projects. Study of the concepts, methodologies and strategies of planning and evaluation.

Prerequisite: AGRO 2250, AGRO 3015.

AGRO 4025 - Agricultural Marketing (3)

Discussion of strategies for the marketing of agricultural products and their derivatives through different media, including digital, with emphasis on the continuous improvement of relationships with customers and consumers. Emphasis on identifying opportunities for agrobusiness.

Prerequisite: AGRO 3015.

AGRO 4030 - Research in Agricultural Science (3)

Study of qualitative and quantitative research designs, the use of data and statistical applications to analyze problems in agricultural production. Emphasis is placed on the development of practices, processes, and the use of technology to promote efficiency, product safety, and the sustainability of operations.

AGRO 4910 - Practice in Agricultural Science (3)

Practical field experience in a real work environment where the student will integrate professional skills acquired through their academic training. It requires 15 hours of seminar and 120 hours of supervised practice in an agricultural or livestock production system.

ANTH - Anthropology

ANTH 1040 - Introduction to Anthropology (3)

Explanation of the origin and the biological and cultural evolution of humanity. Emphasis in anthropological sciences and their distinctive branches.

ANTH 2030 - Social Anthropology (3)

Description of the processes of acquisition of culture and language by the individual and his participation in structural terms in the five basic institutions that compose any socio-cultural system: economical, political, kinship, educational and religious.

ANTH 2040 - Culture and Environment (3)

Description and analysis of the relationship between the cultural characteristics and the conditions of the habitat. Emphasis on the relations of production, the use of power and environmental diversity.

ANTH 2060 - Language and Culture (3)

Explanation of the relationship among language, society and culture. Identification of the universal characteristics of language as well as its structure from a descriptive and conceptual perspective. Presentation of the symbolic value of verbal and non-verbal language, by means of cross-cultural analysis.

ANTH 3000 - World Prehistory (3)

Analysis of the development of culture from the most remote hominids to the moment at which history begins to be recorded. Contrast of the interaction between nature and culture, in time and space, and its manifestation in cultural diversity in different parts of the world.

ANTH 3010 - Ethnography and Ethnology (3)

Use of methods and techniques applicable to ethnographic work as the basis and source of ethnological knowledge. Includes the review of historical development of the ethnographic schools and the development of ethnography in Puerto Rico. Exercises in field research will be carried out.

ANTH 3020 - Anthropology and Religion (3)

Review of the theories of the origin of religious beliefs, practices and rituals, the supernatural and magic. Emphasis in the social function of religion and its relation with culture.

ANTH 3050 - Studies of Popular Culture (3)

Review of the different levels of capacity, creation and expression of the culture with emphasis on the developments of popular culture. Examples of human creativity through the study of the folklore, patrimony, artisan production and the cultural vanguards in the business and tourist consumer system.

ANTH 3500 - Archeology (3)

Review of culture through the archaeological legacy. Includes the application of methods and techniques of archaeological interpretation; relation between facts and theories; planning of excavation projects and preparation of reports. Field visits and study trips.

ANTH 3600 - Physical Anthropology and Human Evolution (3)

Comparative analysis of the human being and the primates with emphasis in biological evolution, from its ancestral forms. Analysis of genetic interrelation and the concept of race.

ANTH 4020 - Health Anthropology (3)

Analysis of the impact of culture on the notions regarding health and disease. Includes hygiene and nutrition. Comparison of the preventive and curative practices in traditional and modern societies and in the global system.

ANTH 4400 - Cultural Change (3)

Analysis of socio-cultural changes as product of internal or external changes. Includes the study of processes of change such as diffusion, innovation, acculturation and the theories of social change as cultural ecology.

ANTH 4700 - Cultures of The Caribbean (3)

Comparative study of historical, social, linguistic and cultural formation of Caribbean societies. Includes the connection to the areas of the circum-Caribbean: Venezuela, Colombia, Mexico and others.

ARAB - Arabic

ARAB 1001 - Basic Arabic I (4)

Introduction to the phonological system of the language and the foundations of the writing system. Emphasis on oral production and the development of vocabulary for effective communication in daily life situations.

ARAB 1002 - Basic Arabic II (4)

Development of the phonological system of the language and the foundations of the writing system. Emphasis on oral production, reading and the development of vocabulary for practical purposes. Cultural aspects will be learned through cocurricular activities.

ARAB 2021 - Intermediate Arabic I (3)

Review of grammar and study of composition in Arabic. Emphasis on the oral language. Practice of reading at the intermediate level

Prerequisite: ARAB 1002 or two years of high school Arabic.

ARAB 2022 - Intermediate Arabic II (3)

Review of grammar and study of composition in Arabic. Emphasis on the oral language. Practice of reading at the intermediate level.

ARED - Art Education

ARED 1080 - Field Experiences in the Teaching of Fine Arts I (1)

Introduction of the educational system with emphasis on the visual arts program. Selected group or individual experiences in schools and other agencies with the visual arts component. Requires a minimum of 10 hours in the educational scenario and 10 hours of meetings with the professor. Course must be passed with a minimum grade of B.

ARED 2000 - Theory and Fundamentals of the Teaching of the Fine Arts (3)

Discussion of the theories and fundamentals of artistic education. Detailed study of the stages of human development with an emphasis on the plastic arts.

ARED 2060 - Integration of Technology in the Teaching of the Fine Arts (2)

Management of various technological tools to conduct the educational process of the fine arts.

Prerequisite: GEIC 1010.

ARED 2080 - Field Experiences in the Teaching of Fine Arts II (2)

Introduction to the teacher-student relationship. Selected group or individual experiences in schools and other agencies with the visual arts component. Requires a minimum of 15 hours in the educational scenario and 15 hours of meetings with professors. Course must be passed with a minimum grade of B.

Prerequisite: ARED 1080.

ARED 3016 - Assessment Strategies in the Teaching of Fine Arts (3)

Analysis of the theories, techniques and means used by fine arts teachers to make evaluation and assessment. Design of evaluation, correction and interpretation instruments; discussion of the most appropriate assessment techniques for exercises or projects related to fine arts, to improve the teaching-learning process.

ARED 3080 - Clinical Experiences in the Teaching of Fine Arts I (2)

Educational practice as an assistant teacher in a school or visual arts program. Initial work with small groups, then with the whole group. Requires a minimum of 25 hours in the educational scenario and 15 hours of meetings with the professor. Course must be passed with a minimum grade of B.

Prerequisite: ARED 1080, 2080, EDUC 3013.

ARED 3860 - Methods in the Teaching of Fine Arts in the Elementary and Secondary School (4)

Discussion of the learning strategies and methods applied to the teaching of fine arts in elementary and secondary school. Drafting of daily goals and plans.

Prerequisite: ARED 2000 and ARED 3016.

ARED 4902 - Research in the Teaching of Fine Arts (2)

Study of quantitative and qualitative research strategies. Analysis of researches completed by fine arts teachers in their classrooms. Identification of the type of research to be used in the plastic arts classroom.

ARED 4913 - Clinical Experiences in the Teaching of Fine Arts II (4)

Practice teaching as a student teacher under the direct supervision of a cooperating teacher, specialized in art education, and of a University supervisor. The student teacher will have the opportunity to put art education methodology into practice and will have the responsibility of planning and giving a class during the school semester. The practicing student will be placed in an elementary or secondary private or public school classroom. The classroom becomes a laboratory where techniques, methods strategies of the profession are used. A minimum of three hours daily from Monday to Friday in an educational scenario is required.

Prerequisite: 90 credits including ARTS 1104, 2403, ARED 3750, 3850, 4015.

AREN - Architectural Engineering

AREN 1100 - Architecture and Building Technology (3)

Study of the meaning of architecture in relation to culture, the development of building technology and socio-political structure at different times. Relationship between the architect and the engineer in modern society. Description of architectural design elements, the anatomy of the building, and theory and practice of building technology in architecture. Evaluation of the Prerequisites of individual engineering systems and their integration into a complete architectural design.

AREN 2220 - Architectural Engineering Graphics (3)

Study of graphic language. Application of the acquired knowledge to solve space problems. Discussion of symbols and standards applied to engineering. Application of the fundamentals of freehand drawing and study of program-based graphics used for architectural design and construction. Use of two and three dimensional geometric elements in computer graphics. It requires 45 hours of conference - laboratory.

AREN 3020 - Architectural Engineering Materials (3)

Discussion of the physical and chemical properties of the materials commonly used in the design and construction of architectural buildings. Granulometric study of fine and coarse aggregates. Selection of materials used in architectural engineering, such as concrete, steel, timber, and soil, and description of their mechanical behavior. Description of standardized tests for these materials.

Prerequisite: MECN 3135.

AREN 3025 - Architectural Engineering Materials Laboratory (1)

Development of experiments related to the materials commonly used in the design and construction of architectural structures. Carrying out of standard tests for materials such as concrete, steel, wood, soil, among others.

Requires 45 hours of closed laboratory.

Corequisite: AREN 3020.

AREN 3110 - Structural Analysis (3)

Study of the basic principles and theorems of the structural analysis and concepts such as the strain energy, simple structures, and trusses. Problem analysis of statically indeterminate structures with prismatic and non-prismatic elements with the slope-deflection method and moment distribution. Approximate analyses for multi-story buildings.

Prerequisite: MECN 3165.

AREN 497_ - Special Topics (3)

Discussion of special topics of current interest in the Architectural Engineering field which are not covered in the major program courses. Requires 45 hours of conference.

Prerequisite: Authorization of the department chair.

AREN 4021 - Construction Engineering I (3)

Discussion of the fundamental concepts of construction engineering: pre-construction process, development of cost estimates, bids, contracts, permits, and government regulations. Discussion of the organization of a construction company, project planning and scheduling.

Prerequisite: MATH 2251.

AREN 4022 - Construction Engineering II (3)

Study of the fundamental concepts of construction engineering. Description of the financial issues associated to construction such as cost control, warranties, insurances, engineering economics, among others. Discussion of advanced issues related to contracts, conflict management, labor issues, and construction projects safety. Study of ethical issues and canons of professional responsibility.

Prerequisite: AREN 4021.

AREN 4110 - Computational Structural Analysis (4)

Description of matrix and finite elements methods in the structural analysis and how they are implemented in commercial computer software. Study of the flexibility and rigidity methods. Extensive use of computer for the solution of structural problems. Requires 45 hours of conference and 45 hours of closed laboratory.

Prerequisite: AREN 3110.

AREN 4120 - Structural Dynamics (3)

Study of free and forced vibrations. Evaluation of the steady state and transient response in single-degree-of-freedom and multiple-degrees-of-freedom structures. Consideration of the damping effects and inelastic deformation. Description of the nature of dynamic loads originated from earthquakes, explosions, and wind. Discussion of the analytic methods used for the design of seismic resistant structures.

Prerequisite: AREN 3110.

AREN 4200 - Design of Concrete Structures (3)

Analysis of stresses and design of reinforced concrete structural elements subjected to axial, flexural, transverse, and combined loads. Study and application of local and international building codes and the principles that regulate the design of basic structural elements such as beams, columns, shear walls, and slabs. Discussion of examples related to the complete structural design of multi-story buildings including seismic design.

Prerequisite: AREN 3020 and AREN 3110.

AREN 4210 - Design of Steel Structures (3)

Analysis and design of structural steel elements subjected to elastic or plastic stresses due to axial, flexural, transverse, and torsional loads. Design of both welded and bolted connections under static and fatigue loads. Discussion of examples related to the complete structural design of multi-story buildings including seismic design.

Prerequisite: AREN 3020 and AREN 3110.

AREN 4220 - Soil Mechanics and Foundations (3)

Introduction to the identification and description of soils. Evaluation of mechanical and hydraulic properties of great importance in the design of building foundations, such as stress and deformation characteristics, bearing capacity, and consolidation characteristics, and how they affect the behavior, selection, and size of either type of shallow or deep foundation.

Prerequisite: AREN 3020.

AREN 4230 - Fire Protection Systems (3)

Introduction to water-based fire protection systems. Study of fluid dynamics and heat transfer processes. Description of the components related to these systems such as sensors, sprinklers, piping, pumps, and emergency cisterns. Design of fire protection systems following local and international codes and regulations.

Prerequisite: MECN 3115.

AREN 4240 - Elevators and Electrical Escalators (3)

Analysis of the development of building transportation systems for persons. Description of the different types of elevators and electrical escalators and their components. Evaluation and selection of these equipment following the architectural, transportation, and safety needs. Comprehension of the codes that rule this equipment, inspection processes, and maintenance.

Prerequisite: MECN 3010.

AREN 4250 - Illumination Systems (3)

Study and analysis of the concepts of illumination, vision, color, and electric lighting sources from the perspective of applied engineering. Study and application of methods to calculate illumination values. Lighting systems design of indoor and outdoor applications using computational tools. Application of codes and standards to achieve a sustainable design.

Prerequisite: ENGR 3365 or ELEN 3301.

AREN 4810 - Design Project in Architectural Engineering (4)

Integration of the fundamental knowledge of architectural engineering for the solution of problems. Study and application of the design methodology, analysis, economic evaluation, and optimization of problems related to architectural engineering systems. Emphasis in teamwork and effective oral and written communication skills. Requires 45 hours of conference and 45 hours of laboratory.

Prerequisite: Authorization of the department chair.

AREN 4910 - Practice in Architectural Engineering (3)

Practice in an architectural engineering work scenario in a private industry or in government, supervised by an engineer of the practice center and by a faculty member. Requires a minimum of 135 hours of practice and a presentation of a comprehensive report based on student's real experience in the field of architectural engineering.

Prerequisite: Authorization of the faculty member in charge of the course.

AREN 4921 - Undergraduate Research in Architectural Engineering I (3)

Development or collaboration of a research project in the area of architectural engineering under the supervision of a faculty member. Student will devote a minimum of 135 hours of work in the development of the research project.

Prerequisite: Authorization of the department chair.

AREN 4922 - Undergraduate Research in Architectural Engineering Ii (3)

Development, collaboration or continuation of a research project in the area of architectural engineering under the supervision of a faculty member. Student will devote a minimum of 135 hours of work in the development of the research project.

Prerequisite: AREN 4921 and authorization of the department chair.

AREN 4930 - EIT Exam Seminar (2)

Analysis of the topics of architectural engineering in order to strengthen the knowledge of the student who aspires to take the fundamental revalidation exam of Engineering. Discussion of the common topics of mathematics, probability and statistics, economics, ethics, and engineering science. The course material integrates theoretical aspects and the development of practical exercises similar to the fundamental revalidation exam offered in Puerto Rico. It requires 75 hours of face-to-face closed laboratory.

Prerequisite: Authorization of the department chair.

ARTS - Fine Arts

ARTS 1100 - Color Theory (3)

Theory and practice of the relative concepts of color: its physical qualities, its interaction in a work of art. Requires 30 hours of lecture and 30 hours of lab.

ARTS 1102 - Technical Foundations and Drawing Practice (4)

Analysis of impression methods such as typography, gravure, silkscreen printing and lithography "Off-Set". Practice of ways of graphic reproduction. Requires a total of 30 hours of lecture and 60 hours of lab.

ARTS 1104 - Design (3)

Solution of the formal and technical aspects of bidimensional and three-dimensional design. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: ARTS 1102.

ARTS 1106 - Three-Dimensional Design (3)

Analysis of the elements and principles of art applied to works of art in three dimensions. Consideration of space, volume, and proportion in the creation of works of art. Requires 30 hours of lecture and 30 hours of lab.

ARTS 1150 - Philosophy of Art (3)

Analysis of the philosophical theories of art in different cultures. The student is stimulated to critically judge artistic expression.

ARTS 1200 - Introduction to Graphic Design (3)

Discussion of the fundamental elements of design. Practice in the use of lines, measures, colors, perspective, forms and the effect of light and shade. Requires 30 hours of lecture and 30 hours of lab.

ARTS 1220 - Electronic Image (3)

Application of the different graphic formats of color work in impression and for the screen. Development of images of both types and the basic processes of their reproduction. Emphasis on the basic aspects of resolution, format, interpolation, handing of color and file sizes. Requires 30 hours of lecture and 30 hours of lab.

ARTS 1300 - Introduction to Pottery (4)

Development of ceramic skills; techniques of throwing and hand building. Use of glazes and engobes. Requires 30 hours of lecture and 60 hours of lab.

ARTS 1400 - Basic Photography (3)

Discussion of photography as tool for the creation of a plastic work of art. Analysis of theory and visual contact skills in elementary photography. Correct use of the camera, film development, types of film, amplification of negatives and different grades and sizes of photographic paper. Requires 30 hours of lecture and 30 hours of lab.

ARTS 1420 - Typography Design (3)

Use of typography as a fundamental element of design, its historical perspective before computers and in the digital era. Designs of visual communication types. Requires 30 hours of lecture and 30 hours of lab.

ARTS 1430 - Design for Printed Publication And Electronic Distribution (3)

Discussion of publication impression, color separation and impression techniques. Evaluation of the means and formats of electronic dissemination. Practice in graphic printing techniques and electronic media. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: GEIC 1010.

ARTS 1541 - Digital Photography (3)

Analysis of the theory and practice in handling fixed images. Use of the digital camera for the creation of digital images. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: ARTS 1220.

ARTS 1600 - Evolution of The Graphic Design (3)

Discussion of the evolution of graphic design, from its beginnings to the present. Emphasis on the impact of the industrial revolution in the development of the discipline.

ARTS 2060 - Drawing in Fluid Media (3)

Analysis of fluid media for the creation of artworks in drawing. Use of ink, nib, brush, and markers as a medium of drawing. Considerations on surfaces and supports. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: ARTS 1102 and 2040.

ARTS 2062 - Color Drawing (3)

Analysis of color theory and the use of color in drawing, with emphasis on techniques, strategies, and materials to develop individual concepts in color drawings. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: ARTS 1102 and 2040.

ARTS 2040 - Drawing (3)

Analysis and execution of concepts and processes of the medium. Development of drawing skills through workshop exercises and assigned projects. Exercises range from the creation of realistic drawings to the creation of works that highlight personal expression. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: ARTS 1104.

ARTS 2061 - Drawing on Abrasive Media (3)

Analysis of the abrasive media for the creation of artworks in drawing. Use of carbon, graphite, crayons, and chalk, among others, as a drawing media. Considerations on surfaces and supports. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: ARTS 1102 and 2040.

ARTS 2100 - Designs in Native Materials (3)

Study of the innate properties of materials; exploration of their varied possibilities in the field of design and the development of aesthetic sensitivity. Discussion of assembly techniques, cutting and finishing works of art in these materials. Requires 30 hours of lecture and 30 hours of lab.

ARTS 2104 - Historical Concepts of Puerto Rican Design (3)

Systematic study of ideas related to design in painting, sculpture, architecture and the minor arts.

ARTS 2105 - Designs in Manufactured Materials (3)

Creative experiences with disposable natural and industrial materials. Requires 30 hours of lecture and 30 hours of lab.

ARTS 2111 - Graphic Design Applied to Internet (3)

Use of typography, still images and images in movement. Introduction to language HTML and the edition programs of Web pages. Application of the principles and elements of art in the designs of electronic pages, graphic material distributed through cyberspace and the publication of material in Internet. Requires 30 hours of lecture and 30 hours of lab.

ARTS 2140 - Drawing I (4)

Basic problems in graphic execution with specific emphasis on the development of individual concepts. Requires 30 hours of lecture and 60 hours of lab.

Prerequisite: ARTS 1102.

ARTS 2250 - Painting I (4)

Principles of oil painting and acrylic painting. Study of fundamental techniques in the production of pictorial works. Considerations of composition, concept, and style. Requires 30 hours of lecture and 60 hours of lab.

Prerequisite: ARTS 2040.

ARTS 2252 - Painting: Color Investigations (3)

Analysis of the properties of color in painting media. Study of color, those produced by light, and the ones formed by the combination of pigments. Application of color in painting to study their interaction and their role in pictorial composition. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: ARTS 2250.

ARTS 2260 - Relief Sculpture (3)

Discussion of the sculptural form for relief work using various materials and procedures. Analysis of the principles and elements of art applied to three-dimensional works in relief. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: ARTS 1102 and 1106.

ARTS 2300 - Functional Pottery (3)

Application of advanced techniques in the construction of clay objects with the pottery wheel or by hand with emphasis on the technical and functional aspects in ceramics. Basic chemistry of ceramics and study of the diverse firing methods. Study of trends in the design of functional ceramics in different periods and their conceptual and technical solutions. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: ART 1300.

ARTS 2306 - History of Photography (3)

Analysis of the history of photography and its development as a means of artistic expression. The technical evolution through time will be discussed, as well as its applications and artistic proposals.

ARTS 2331 - Design of Interactive Projects, Multimedia and Mobile Apps (3)

Use of computerized animation programs of file and interactive in the production of interactive projects. Design of interactive projects for mobile applications. Requires 30 hours of lecture and 30 hours of lab.

ARTS 2355 - Introduction to The Graphic Arts (3)

Study of the basic processes: wood engraving, linoleum engraving, engraving with burin and engraving by etching. Study of the development of engraving over time. Analysis of its particularities and possibilities as an artistic means. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: ARTS 2140.

ARTS 2403 - History of Art (3)

Panoramic study of art from prehistory to the realism of the nineteenth century.

ARTS 2406 - Art Masterpieces (3)

Analysis of the fundamentals of visual interpretation and the special aspects of plastic arts character. Development of critical vocabulary for the analysis and interpretation of

the work of art through the study of masterpiece examples in history.

ARTS 2521 - Three-Dimensional Design (3)

Elaboration of digital designs and the application of its formal and conceptual possibilities. Requires 30 hours of lecture and 30 hours of lab.

ARTS 2540 - Video and Digital Sound (3)

Review of digital video, the image in movement and the sound. Practice of the edition and manipulation techniques of the digital video. Requires 30 hours of lecture and 30 hours of lab.

ARTS 2541 - Special Effects for Digital Video (3)

Application of special effects in the production of digital videos, by means of the use of selected edition techniques. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: ARTS 2540.

ARTS 2600 - Black and White Photography (3)

Analysis of the exposure, processing, and enlarging of black and white negatives. Analysis of the appropriate use of black and white photographic film, as well as appropriate paper and equipment for its production. Application of the available techniques in the production of images for visual communication. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: ARTS 1540.

ARTS 2700 - Multiple Techniques (3)

Application of different plastic techniques in creating works in two and three dimensions. Analysis of technical contributions to the solution of the concept in the work.

ARTS 2911 - Supervised Experience in Graphic Arts (3)

Supervised professional experience in companies, organizations or projects related to areas of graphic design. Requires time in graphic design scenarios, in agreement with the professor.

Prerequisite: Have approved a minimum of 29 credits of the program's major and course GEIC 1010.

ARTS 3000 - Ethics in Graphic Design (3)

Application of ethical principles in the professional practice of graphic design. Includes current legislation on copyright and intellectual property.

ARTS 3004 - Arts of The Book (3)

Study of the processes related to the creation of artisan books or artist books. Analysis of the structure of the book and its components from ancient times to the technological era. Work with typography, illustration using engravings and binding. Processes will be focused on the design of the book. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: ARTS 1104 and 2355.

ARTS 3105 - Metal Jewelry (3)

Design on a small scale with emphasis on making jewelry utilizing metals such as copper, aluminum and sterling. Experimentation with casting on a small scale. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: ARTS 1102.

ARTS 3150 - Drawing II - Figure (3)

Study of the human anatomy as a form of art, using traditional techniques. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: ARTS 2140.

ARTS 3210 - Painting II (3)

Introduction to freedom in handling painting techniques: oil, acrylics, collage etc. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: ARTS 2250.

ARTS 3212 - Figure Painting (3)

Analysis of the human figure in pictorial representation. Study of the anatomy, the volumetric structure, the relationship between figure and the environment, the composition and blending of color in its psychological and narrative context for the representation of figure in space. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: ARTS 2250.

ARTS 3250 - Wood Carving Sculpture (3)

Use of wood carving techniques. Discussion of the peculiarities in making works of art in round and relief. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: ARTS 1102 and 1106.

ARTS 3303 - Sculptural Ceramics (3)

Application of complex techniques and the conceptual and technical aspects of sculptural ceramics. Requires 30

hours of lecture and 30 hours of lab.

Prerequisite: ARTS 2300.

ARTS 3305 - Figurative Ceramics (3)

Application of ceramics as a means for small and large scale figurative work. Study the potential of plastic as the medium for the creation of figurative sculptural work. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: ARTS 1300.

ARTS 3351 - Serigraphy I (3)

Study of silk-screening as a means of creation in Puerto Rico. Study of engraving techniques in silk-screening. Review of the differences in use and qualities produced by printing methods. Suitable and safe use of the materials in silk-screening. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: ARTS 1102.

ARTS 3352 - Serigraphy II (3)

Application of the skills and concepts of silk-screening in artistic creation. Analysis of silk-screening creations as works of art in and outside Puerto Rico. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: ARTS 3351.

ARTS 3355 - Linoleum and Wood Engraving Techniques (3)

Application of engraving processes in wood and linoleum. Technical study: creation of the plate, inking and the stamping. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: ARTS 2140, 2355.

ARTS 3360 - Art and Technology (3)

Analysis of the relationship between the arts and technology. Historical examination of technology as a determinant of the horizons of possibilities of artistic forms.

ARTS 3400 - Photography III (3)

Application of the skills learned in the field of photography. Introduction of new techniques such as solarization, "vignetting" and photographic diagram. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: ARTS 1400.

ARTS 3403 - History of Modern and Contemporary Art (3)

Panoramic study of the more recent artistic movements, beginning with Impressionism and including the styles of contemporary art.

ARTS 3407 - Gender, Representation and the Visual Arts (3)

Analysis of how historians have interpreted the representations of subjects in terms of gender throughout history. Selection of Renaissance works of art at the end of the 19th century. Attention to the historical, conceptual contexts of gender and cultural attitudes towards women, their conditions and experiences in artistic practice.

ARTS 3410 - Lighting (3)

Application of natural and artificial lighting technique used in photography. Use and management of natural and artificial light and related equipment. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: ARTS 1540.

ARTS 3415 - History of Latin American And Caribbean Art (3)

Analysis of the development of plastic arts in Latin America and the Caribbean. Critical look at the development of the arts in the region from the colonial to the contemporary period.

ARTS 3420 - Typography Design Ii (3)

Evaluation of the structures, terminology and methods of typography as a tool for the solution of advanced visual design problems. Emphasis on the language of typography and its effective use in the presentation of works such as logos, corporate images and commercial products, using manual and electronic work. It requires a total of 30 lecture hours and 30 laboratory hours.

ARTS 3450 - Color Photography (3)

Analysis of techniques and management of digital color images in the digital laboratory. The composition and use of the descriptive and aesthetic aspect of color in photography is emphasized. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: ARTS 1540.

ARTS 3600 - Poster Design (3)

Evaluation of the various forms of poster design through content and concept research. Creation of appropriate

images for the communication of ideas. Manipulation of the typography and combination of the elements of the design in a coherent way. It requires a total of 30 lecture hours and 30 laboratory hours.

ARTS 3660 - Documentary or Social Photography (3)

Analysis of the technical and conceptual possibilities of photography to create images illustrating phenomena or social or cultural issues. Study of the techniques, themes, and images that have been impressive in photojournalism and photo-essay. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: ARTS 1540.

ARTS 3662 - Figure Photography (3)

Application of photographic techniques in design, lighting, and composition to the human figure and portrait images. Study of formal and informal portrait and natural and artificial lighting in both color and black and white. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: ARTS 1540.

ARTS 3405 - History of Puerto Rican Art (3)

Study of artistic evolution in Puerto Rico from the pre-Columbian period to the present.

ARTS 4000 - Corporate Identity Design (3)

Analysis of the different aspects related to local, global, public, and private corporate identity. Discussion on visual communication that defines the image of corporations and identities, and its projection in the globalized world. Design of a brand and corporate identity. It requires a total of 30 lecture hours and 30 laboratory hours.

ARTS 4010 - Engraving and The Image (3)

Analysis of the expressive possibilities of engraving and its techniques in the production of the artwork. Use of the medium to solve conceptual and technical problems. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: ARTS 2355.

ARTS 4100 - Watercolor (3)

Study of the techniques of transparent water color; analysis of the techniques and styles of various artists. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: ARTS 2140.

ARTS 4150 - Advanced Drawing (3)

Development of individual concepts in graphic execution. Includes media such as coal, pencil, "crayon", pen, drawing with watercolors, and others. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: ARTS 2040.

ARTS 4202 - Airbrush (3)

Application of Airbrush techniques for general painting and commercial design. Study of different materials for this technique and their safe use. Requires 30 hours of lecture and 30 hours of lab.

ARTS 4210 - Mural Painting (3)

Study of mural concepts, independent projects. Analysis of the creation of mural paintings in and outside Puerto Rico. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: ARTS 2250.

ARTS 4251 - Assemblage (3)

Use of advanced techniques emphasizing the development and improvement of traditional techniques to make assembled sculptural works. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: ARTS 1106.

ARTS 4252 - Experimental Painting (3)

Analysis of the technical and conceptual possibilities of painting to create works of art that reflect personal and artistic concerns. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: ARTS 2250.

ARTS 4253 - Sculpture III (3)

Advanced techniques with emphasis on the development and improvement of traditional techniques. Experimentation with contemporary materials such as Plexiglas, polyester, resin, metals and others. Study of trends in sculpture over time. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: ARTS 3250.

ARTS 4254 - Metal Sculpture (3)

Creation of works of sculpture, utilizing techniques of soldering and casting in bronze and other metals. Requires 15 hours of lecture and 75 hours of lab.

Prerequisite: ARTS 2260.

ARTS 4255 - Painting III (3)

Experiments and research in painting. Emphasis on the development of individual concepts. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: ARTS 3210.

ARTS 4256 - Sculpture - The Human Figure (3)

Sculptural study of the human figure. Analysis of movement, proportion and rhythm of the human figure and its three-dimensional projection. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: ARTS 2250.

ARTS 4260 - Advanced Painting (3)

Development of a body of work that presents the culmination of undergraduate work in painting. Attention will be given to the articulation and refinement of the artistic voice in the individual work of art. Critical emphasis comprising both technical and theoretical practice in the paintings made in the course. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: ARTS 2250.

ARTS 4303 - Clays and Glazes (3)

Chemical-physical relation of the materials utilized in ceramics and how they react during the different stages in making a ceramic object. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: ARTS 1300.

ARTS 4350 - Intaglio Techniques (3)

Study and application of different techniques of Intaglio such as dry point, etching, aquatint and others. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: ARTS 2355.

ARTS 4352 - Layout Design (3)

Design preparation for photo-mechanic printing. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: ARTS 1102.

ARTS 4353 - Lithography (3)

Study and practice of the different graphic design techniques used in lithography. Knowledge of different

materials used. Experimentation with the medium. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: ARTS 2355.

ARTS 4355 - Photo Serigraphy (3)

Study of photographic images for creation, handling and printing when using silk-screening techniques. Emphasis on the application of photographic and typesetter prints in silk-screening artistic creations. Use of journalistic images, selection and handling of photographs taken to be used in the work and for making manual and electronic prints. Experimentation with typographic prints in silk-screening. Requires 15 hours of lecture and 45 hours of lab.

Prerequisite: ARTS 1104, 3351.

ARTS 4360 - Digital Art (3)

Use of the computer for making artistic works. Study of existing equipment and programming for making images, the manipulation and handling of images. Emphasis on the application of the elements and principles of art in images. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: ARTS 1104, GEIC 1010.

ARTS 4365 - Computerized Graphic Design (3)

Use of the computer and digital processes for making graphic designs. Study of programs for the design and printing of digital graphic material. Introduction to electronic publishing design. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: ARTS 1104, GEIC 1010.

ARTS 4453 - Specialized Photography (3)

Introduction to the processes and techniques used by Island newspapers to publish photographs. Emphasis on the production of a visual and written narrative. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: ARTS 1400.

ARTS 4600 - Large Format Photography (3)

Analysis of the particularities of large-format photography in the principles of exposure, development, and enhancement of images. Use and management of medium and large format cameras and negatives. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: ARTS 1540.

ARTS 4602 - Alternate Processes in Photography (3)

Introduction to non-traditional methods of production and the available processes available for the production of photographic images. Experimental work in the analogous laboratory. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: ARTS 1540.

ARTS 4860 - Packaging Design (3)

Evaluation of two-dimensional and three-dimensional shapes for the creation of containers and packaging. Study of packaging design taking into consideration use and production. Construction of three-dimensional prototypes. It requires a total of 30 lecture hours and 30 laboratory hours.

ARTS 4911 - Supervised Practice (3)

Advanced professional practice in companies, organizations or projects related to the areas of graphic design. Requires 135 supervised hours in a graphic design setting, in agreement with the course teacher.

Prerequisite: Have approved the major courses.

ARTS 4920 - Graphic Design for Display and Environmental Works (3)

Study of graphic design for the preparation of exhibitions and environmental works; the design considerations in the use of form and space; and the design and construction of scale models. It requires a total of 30 lecture hours and 30 laboratory hours.

AUDI - Auditing

AUDI 2195 - Governmental Regulations in Business (3)

Introductory study of regulations applying to business, such as: income tax laws, movable and immovable assets, sales tax, inheritance, and donations. Includes employer regulations related to occupational health and safety, and special laws that regulate business.

AUDI 3090 - Fundamentals of Internal Auditing (3)

Introduction to the internal and operational auditing. Evolution and characteristics of the internal auditing; its relation with other disciplines, and its function within management. A complete vision of the auditing cycle is presented: initial stage, reporting and discussion. Study and analysis of the different formats and documents in the data gathering. The importance of the evidence during the intervention is examined and the Code of Ethics of the Internal Auditor is studied.

Prerequisite: ACCT 3062.

AUDI 3091 - Fundamentals of Internal Auditing (4)

Introduction to internal and operational auditing. Evolution and characteristics of internal auditing are studied as well as the relationship of auditing to other disciplines and its role in management. Complete view of the auditing cycle is presented: initial stage, report preparation and discussion. Study and analysis of different formats and documents in data collection. Relative importance of the evidence collected during the audit is examined and the Code of Professional Ethics of the Internal Auditor is studied.

Prerequisite: ACCT 2062.

AUDI 3092 - Internal Auditing Administration (3)

Function of the internal auditor within the administrative framework of the enterprise. Analysis of the responsibilities of the Internal Auditing Department. Strategy planning for the development of a short term and long term work plan with emphasis on relationships to external auditors, management and the board of directors. Study of the implementation of the quality control program for evaluating internal auditing.

Prerequisite: AUDI 3091.

AUDI 3190 - Auditing of Information Systems (4)

Analysis of the responsibility and function of the auditor in the field of information systems. The nature and operation of the systems are described, as well as the means for testing the efficiency and effectiveness of their controls. Use of computerized programs and application of auditing techniques by computer such as: test data, extraction of samples, tracking by computer and development of flow charts.

Prerequisite: AUDI 3091, GEIC 1010.

AUDI 3193 - Information Systems Intervention (3)

Analysis of the responsibilities and functions of the auditor in the information systems field. It is described the nature and functioning of the systems, and the tools to prove it efficiency and effectiveness of the controllers. Use of the computarized programs and the application of auditing techniques through the computer, such as: test data, sample extraction, computer tracking and development of chartflows.

Prerequisite: AUDI 3090 and GEIC 1010.

AUDI 4194 - Report Writing in Auditing (3)

Preparation of internal, external, compliance and operational auditing reports. This includes letters of representation, management, contract, recommendations for internal control, narrative, findings summary, internal auditing reports, opinions and other written communications that are part of the duties of the auditor's role.

Prerequisite: AUDI 3091, ACCT 4010.

AUDI 4195 - Investigation of Fraud (3)

Analysis of several aspects of fraud which include: its nature, its prevention, detection and investigation. The course is designed to expose the student to the process of fraud investigation that involves compiling evidence, taking declarations, writing reports, assisting in its detection and prevention, etc.

Prerequisite: ACCT 4010, AUDI 3092.

AWSC - Airway Science

AWSC 2000 - Introduction to Aeronautics and Space (3)

Study of the basic foundations of aviation, its historical development, its regulations, the contemporary trends in aerial transportation and general aspects of the aerospace industry.

AWSC 2020 - Aviation Fundamentals (3)

Analysis of the principles of design of airships and their characteristics of yield and operation including the regulations related to the maintenance of airships and related systems. Study of the integration of airports, airspace and air traffic control in the management of the National System of the Airspace. Analysis of the impact of the meteorological and environmental problems in aviation operations.

Prerequisite: AWSC 2000.

AWSC 2115 - Private Pilot Theory (5)

Study of the principles of flight and the development of the skills required for the for Private Pilot Certification Examination of the Federal Aviation Administration (FAA). A minimum grade of C is required to approve this course.

Prerequisite: AWSC 2000, a First Class Medical Certificate issued by a medical doctor recognized by the Federal Aviation Administration (14 CFR Part 67) and an

interview in English with a panel directed by the chief of flight instructors or the designated person. .

AWSC 2116 - Private Pilot Flight Laboratory (1)

Flight laboratory for the development of the skills required for the Certification for Private Pilot examination of the Federal Aviation Administration of (FAA). Requires a minimum of 40 flight hours. It may require additional hours of individualized flight theory or training depending on the mastery of the skills required for obtaining the certificate. The certification Prerequisites are publicized by the Federal Aviation Administration of (FAA) and may change at the discretion of the agency.

Prerequisite: Interview with the Chief Instructor, have approved course AWSC 2115 o AWSC 2117, and have a First Class Medical Certificate issued by a medicine doctor recognized by the Federal Aviation Administration (FAR Part 67).

AWSC 2117 - Private Pilot (6)

Study of air legislation. General knowledge of aircraft, flight and performance planning, human factors, meteorology, navigation, operating procedures, principles of flight, and communications. It includes the topics required for the Federal Aviation Administration (FAA) Private Pilot Certification exam. A minimum grade of C is required to approve this course.

Prerequisite: AWSC 2000 . First Class Medical Certificate issued by a doctor of medicine recognized by the Federal Aviation Administration (14 CFR Part 67) and an interview in English with a panel directed by the chief of flight instructors or the designated person.

AWSC 2130 - English Proficiency for Aviation Professionals (3)

Knowledge, development and practice of the skills recommended and used by the International Civil Aviation Organization (ICAO). Emphasis on vocabulary, pronunciation, fluency and comprehension.

Prerequisite: AWSC 2000.

AWSC 2300 - Airline Passenger Services (3)

Study of the services provided to passengers at airports and airlines reservations departments. Includes computerized airline reservation systems.

Prerequisite: AWSC 2000.

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AWSC 3155 - Instrument Rating (4)

Develop the fundamental skills required for the Flight by Instrument Rating of the Federal Aviation Administration. Includes the use of flight instruments and regulations applicable to instrument flight and approach procedures, among others. Requires a minimum of 40 hours of flight. It may require additional time in individualized theory or flight training depending on the mastery of the skills required for obtaining the certificate. The certification Prerequisites are disseminated by the Federal Aviation Administration (FAA) and may change at the discretion of the agency. Students must pass this course with a minimum grade of C.

Prerequisite: AWSC 2115 and 2116 and Private Pilot Certificate.

AWSC 3160 - Commercial Pilot (3)

Development of fundamental skills for commercial pilot certification by the Federal Aviation Administration. Requires a cumulative minimum of 250 hours of flight. It may require additional time in individualized theory or flight training depending on the mastery of the skills required for obtaining the certificate. The certification Prerequisites are disseminated by the Federal Aviation Administration (FAA) and may change at the discretion of the agency. Students must pass this course with a minimum grade of C.

Prerequisite: AWSC 3155 and Private Pilot Certificate with Instrument Rating.

AWSC 3300 - Aviation Law (3)

Discussion and analysis of the principles of law, with emphasis on the statutes and the agreements that regulate aerial transport. Includes the discussion of related contemporary international legal matters.

Prerequisite: AWSC 2000.

AWSC 3411 - Principles of Air Traffic Control (3)

Study of the basic foundations of air traffic control. Aspects of navigation, meteorology, airspace and the federal aerial regulations are discussed.

Prerequisite: AWSC 2000.

AWSC 3600 - Aviation Safety and Security (3)

Study of the Safety Management System (SMS) components. Emphasis on the analysis of air accidents. Analysis of the measures and security laws required at airports and airlines to counteract threats and other risks in air transportation.

Prerequisite: AWSC 3300.

AWSC 4000 - Airport Development and Operations (3)

Analysis of the development of public airports, the importance of the master plan, management problems and the process of airport certification.

Prerequisite: AWSC 3600.

AWSC 4055 - Management of Air Cargo (3)

Analysis of the importance of air cargo services in national and international economics. Study of the management aspects related to this area: history, competition, tariffs, cargo facilities and equipment and future development of the industry.

Prerequisite: AWSC 3600.

AWSC 4100 - Career Development for Aerospace Professionals (1)

Study of professional standards, ethics, professional development and the certifications required in the aerospace industry. Emphasis on preparing the student for the transition to a career in aviation. Includes the development of skills for job placement in the industry, team work, as well as the importance of professional organizations for professional development. It considers the expectations, goals and metrics used in the environment of each specialization.

Prerequisite: AWSC 3600.

AWSC 4204 - Airline Operations (3)

Thorough study of the Federal Regulations of air transportation for airlines and commercial operators. Includes the functions and relations among the various major divisions of a typical airline.

Prerequisite: AWSC 3160 or the approval of the Federal Aviation Administration (FAA) Commercial Pilot written exam and the authorization of the Dean of the School of Aeronautics.

AWSC 4305 - Aviation Meteorology (3)

Analysis of air masses and frontal systems, principles of atmospheric stability, and severe climatologic phenomena.

Prerequisite: AWSC 2020 or AWSC 2115 or AWSC 2117.

AWSC 4310 - Human Factors in Aviation (3)

Analysis of the relationship between human beings and the

functional environment in aviation. Includes human behavior and performance, perception, memory, learning, and ergonomics. Discussion of the implications of decision-making in risk management. Discussion of physiology and the limitations of the human body. Technology and automation in aviation and the relationship between human beings and the aircraft are illustrated.

Prerequisite: AWSC 3600.

AWSC 4320 - Advanced Aircraft Systems (3)

Analysis of the principles of aircraft advanced systems operation.

Prerequisite: AWSC 3160, or approval of the Federal Aviation Administration (FAA) Commercial Pilot written exam, PHYS 3500 and authorization from the Dean of the School of Aeronautics.

AWSC 4340 - Applied Aerodynamics (3)

Analysis of the principles of subsonic, transonic and supersonic aerodynamics, and how these affect the performance of the airplane.

Prerequisite: AWSC 3160, or approval of the Federal Aviation Administration (FAA) Commercial Pilot written exam, PHYS 3500 and authorization from the Dean of the School of Aeronautics.

AWSC 4364 - Flight Instructor-Instruments (1)

Instruction, flight training and practice teaching that will allow the student to obtain the aeronautical skills and knowledge necessary to meet the Prerequisites for a Flight Instructor Certificate with an Instrument Airplane Rating. Requires 10 hours in a single-engine airplane and five hours with instruments in addition to 45 hours of individualized theory with an instructor as preparation for taking the practical exam for flight instructor. It may require additional time in individualized theory or flight training depending on the mastery of the skills required for obtaining the certificate. The certification Prerequisites are disseminated by the Federal Aviation Administration (FAA) and may change at the discretion of the agency.

Prerequisite: AWSC 4370, Flight Instructor Certificate and Commercial Pilot Single & Multi Engine Certificate.

AWSC 4370 - Flight Instructor (4)

Development of the fundamentals of flight instruction. Application of methods of teaching and learning flight maneuvers and evaluation of certification of flight instructor (airplane), flight instructor instrument instructor and multimotor flight instructor. Requires a mínimum of 12 hours in a single-engine airplane and 3 hours in a complex aircraft in addition to 45 hours of individualized theory with an instructor as preparation for taking the practical exam for flight instructor. It may require additional time in individualized theory or flight training depending on the mastery of the skills required for obtaining the certificate. The certification Prerequisites are disseminated by the Federal Aviation Administration (FAA) and may change at the discretion of the agency.

Prerequisite: AWSC 3160 and Commercial Pilot Single & Multi Engine Certificate.

AWSC 4373 - Multi-Engine Instructor (1)

Instruction, flight training and practice teaching that will allow the student to obtain the aeronautical skills and knowledge necessary to meet the Prerequisites for a Flight Instructor Certificate with an Airplane Multiengine Rating. Requires 15 hours of flight with an instructor in a multiengine airplane and 30 hours of theory as preparation for the practical test of Multiengine Flight Instructor. It may require additional time in individualized theory or flight training depending on the mastery of the skills required for obtaining the certificate. The certification Prerequisites are disseminated by the Federal Aviation Administration (FAA) and may change at the discretion of the agency.

Prerequisite: AWSC 4370, Commercial Pilot Single & Multi Engine Certificate and Flight Instructor Certificate.

AWSC 4375 - Commercial Helicopter Pilot ADD-ON (2)

Theory and development of the fundamental skills for certification as commercial helicopter pilot of the Federal Aviation Administration. Requires a minimum of 55 flight hours in a helicopter. It may require additional time of individualized contact or flight training depending on the mastery of the necessary abilities for obtaining the certificate. The certification Prerequisites are promulgated by the Federal Aviation Administration (FAA) and may change at the discretion of the agency.

Prerequisite: AWSC 3170, PHYS 3500 and Single-engine and Multi-engine Commercial Pilot Certificate.

AWSC 4394 - Training Techniques for Flight Crew (CRM Training) (3)

Study of the means and systems available to mitigate human factor errors, such as the flight crew supervision (CRM), standardization and flight procedures, especially those related to threats and errors. Requires a minimum of

15 hours of training in a flight training device. It may require additional time in individualized theory or in a flight training device depending on the mastery of the skills required.

Prerequisite: AWSC 3160 and Certificate of Single-engine and Multi-engine Commercial Pilot.

AWSC 4510 - Airway Dispatcher I (3)

Study of the operations areas for the achievement test for the aircraft dispatcher certification.

Prerequisite: AWSC 2020, 3411, 4305 and 4310.

AWSC 4515 - Air Traffic Control I: Tower Operation (4)

Development of radio communication and basic phraseology skills. Application of air traffic control rules, the duties of control tower operators, and airplane identification.

Prerequisite: AWSC 3411 and have been admitted to the CTI program.

AWSC 4516 - Air Traffic Control II: Radar Operation (4)

Development of radio communication and intermediate phraseology skills. Application of air traffic control rules, the procedures in operating radar, and the use of air navigation charts and other aeronautical publications.

Prerequisite: AWSC 4515.

AWSC 4517 - Air Traffic Control III: In-Route and In Terminals (4)

Development of the radio communication and advanced phraseology skills. Application of advanced air traffic control rules and the duties of controllers.

Prerequisite: AWSC 4516.

AWSC 4520 - Airway Dispatcher II (3)

Study of the operations areas for the practical test for the aircraft dispatcher certification.

Prerequisite: AWSC 4510.

AWSC 4600 - Airline Management (3)

Analysis of management principles of the aviation industry. Includes planning, organization, leadership and controls used by airline management. Discussion of the airline organizational structures, functions and departments.

Prerequisite: AWSC 3600 and OPMS 3000.

AWSC 4650 - Fundamentals of Airline Finance (3)

Introduction of the theoretical foundations of airline finances. Analysis of the financial statements that characterize these companies. Use of practical financial applications in matters of risk management and evaluation.

Prerequisite: AWSC 4600 and FINA 2101.

AWSC 4660 - Fixed Based Operators Management (3)

Application of the skills involved in the implementation of the successful operation of a general aviation business (FBO). Analysis of the evolution and importance of these businesses in the economy.

Prerequisite: AWSC 4600.

AWSC 4670 - International Commerce and Aviation (3)

Analysis of the characteristics, functions and structures of the international transport trade and aviation companies. Development of critical analysis in the areas related to aviation and commerce. Review and assessment of information on problematic areas essential to the development and maintenance of business aviation and international trade.

Prerequisite: AWSC 4600.

AWSC 4680 - Aviation Strategic Management (3)

Integration and application of administrative theories, experiences and knowledge acquired for the effective strategic management of an airline. Analysis of cases and management situations to be used for the application of strategic management principles and for the solution of organizational problems.

Prerequisite: AWSC 4600.

AWSC 4913 - Practicum in Air Agencies Operations (3)

Integration of the knowledge and skills acquired through experience in any work area in an airline, airport operation or general aviation business (FBO) supervised by a university professor. Requires 140 hours of practice.

Prerequisite: Must be graduation candidates.

BADM - Business Administration

BADM 1110 - Intergovernmental Financial Administration (3)

Administrative, political and economic aspects of revenue systems at the federal, state and local levels. Analysis of major taxes, intergovernmental financial relations, and the administration of public enterprise and debt.

BADM 1550 - Business Management and Organization (For Associate Degree Candidates) (3)

Management and organization in relation to types of business, location and physical layout; the buying, selling, pricing and operating functions of business.

BADM 1900 - Fundamentals of Business Management (3)

Description of the fundamentals, development and organizational functioning. Distinction between the entrepreneur who creates and the intrapreneur manager who manages organizations. Study of managerial functions and their importance in the functional areas of organizations. Discussion of topics, such as creativity, innovation, internationalization, ethics, values, organizational change, and other current issues.

BADM 2030 - Business Mathematics (For Associate Degree Candidates) (3)

Intensive practice in the computation and use of percentages, decimals, fractions and typical business calculations such as interests, averages, ratios, use of scales and the interpretation of graphs. Use of various types of calculators frequently found in the modern business office.

BADM 2050 - Business Finance (For Associate Degree Candidates) (3)

Review of the role of the financial manager of a business or industrial enterprise in the procurement and management of short-term, intermediate and long-term funds with special emphasis on profitability cost, sources, timing and taxation.

BADM 2130 - Marketing (For Associate Degree Candidates) (3)

Nature of marketing: its functions, channels and institutions, pricing, marketing research, sales promotion and advertising.

BADM 2262 - Total Quality Management Foundations (3)

Basic foundations of the total quality philosophy in organizations. Emphasis on methodology, architecture, philosophy, analysis and implementation of the concepts using more efficient tools to evaluate system performance and to satisfy clients' needs.

Prerequisite: BADM 1900.

BADM 3250 - Transportation Management (3)

Application of the knowledge of materials distribution. Emphasis on theoretical aspects applied to transportation. Includes the discussion of transportation modes integrated with topics of product distribution, company policies and external forces. Analysis of the relation between demand, cost and rates, and their influence in the economic and corporate system.

Prerequisite: BADM 1900.

BADM 3300 - Communication in Management (3)

The basic elements of oral and written communication in the context of business administration. Emphasis on the development of communication skills and strategies at international business levels. Analysis of communication and its impact on intercultural business relations.

BADM 3313 - The Law and The Businesses (3)

Analysis of the legislation, doctrines and jurisprudence that regulate business transactions. Integration of issues and doctrines of law, applicable to managerial decision making. Evaluation of strategies to minimize exposure to the risk of legal controversies in companies

BADM 3320 - Public Policies Toward Business (3)

The role of government in economic life with emphasis on the regulation of competition and monopoly in Puerto Rico and other areas.

BADM 3330 - Human Resources Management (3)

Analysis of the effectiveness of norms and practices related to human resources in organizations. Emphasis on the activities of strategic planning of human resources: analysis, description, specification and design of positions, recruitment, selection and hiring. Includes, in addition, equal opportunity laws in employment, orientation, training and development, actions related to personnel, personnel evaluation, compensation, health and hygiene, worker-employer relations, and audit of the of human resource processes.

Prerequisite: BADM 1900.

BADM 3570 - Administrative Auditing (3)

Nature and roles of auditing operations with respect to administrative policy, programs, organization, procedure, financing, personnel and their behavior.

Prerequisite: PUAD 3300, 3510.

BADM 3900 - Information Systems in Organizations (3)

Study of the foundations and concepts of information systems and their use in organizations. Application of information systems in the solution of problems and their implications in managerial processes. Use of application programs that help in decision making. 45 hours of lecture-lab.

Prerequisite: BADM 1900, GEIC 1010.

BADM 4190 - Accountability in The Public Sector (3)

Analysis of problems of distribution of resources in the public sector, especially social programs, including the cost of benefits analysis, the extent of result, the quality of service that determines demand, and the characteristics of resources invested.

Prerequisite: PUAD 3300, 3510.

BADM 4300 - Managerial Economics (3)

Application of contemporary economic theory. Use of analytical instruments from other disciplines in the managerial decision-making process.

Prerequisite: MAEC 2212, 2221.

BADM 4320 - Quantitative Models in Management (3)

Application of management principles to the science of research of operations in the management process. Development, analysis and interpretation of quantitative models in the decision-making process of the firm.

Prerequisite: BADM 1900, MAEC 2140, 2222.

BADM 4340 - Protective Labor Legislation (3)

Analysis of the federal and state legal frame of Protective Labor Legislation in the private sector: constitutional guarantees, laws regarding the work contract, antidiscrimination and employment protection laws, work insurances and licenses, security and hygiene protection. Study of the labor statutory system of public employees in the government of Puerto Rico, at the central and

municipal levels. Discussion of the relationships and new trends of the public work policy and the relevant labor legislation.

Prerequisite: BADM 3330.

BIIN - Bioinformatics

BIIN 2150 - Introduction to Bioinformatics (4)

Introduction to the foundations of information science and computer programming. Study of the numerical systems and the representation of data. Formulation and evaluation of logical functions. Identification and description of programming languages and data operating systems used in bioinformatics. Programs design. Emphasis on the basic structures of data, search algorithms and ordering. Lecture-lab. Requires additional time in an open lab.

BIIN 3000 - Programming for Bioinformatics (4)

Analysis, design and implementation of programs by means of an object oriented programming language. Discussion of the foundations of structured, visual and object oriented programming. Error debugging and program documentation. Prerequisite: BIIN 2150. Lecture-lab. Requires additional time in an open laboratory.

BIIN 3220 - Biochemistry (3)

Study of the fundamental concepts of biochemistry, the bio-molecules and the flow of biological information. Analysis of metabolism, carbohydrates, lipids, proteins and nucleic acids.

BIIN 4000 - Databanks (4)

Analysis, design and implementation of different databank models. Databank processing systems. Administration of the structure of standard tables. Introduction to the methods of extracting data with Data Mining. Lecture-lab. Requires additional time in an open lab.

Prerequisite: BIIN 3000.

BIIN 4010 - Computational Biology (3)

Practical approach to the computer applications in molecular biology. Study of the representation and analysis of biological sequences and structural information, including the relation between sequences, structure, and functions of the macromolecules. Includes sequence patterns, probability techniques, graphics and simulations. Emphasis on the use of algorithms to align sequences, allowing the identification of genes and secondary structures. Requires work in an open laboratory.

Prerequisite: BIIN 4000, BIOL 4604 and 4605.

BIIN 4020 - Medical Information (3)

Principles of database design applied to health sciences, human-computer interfaces, medical vocabulary, codification systems, decisional analysis methods in medicine, architecture of clinical information systems, and methods to measure costs and benefits of health systems. Biomedical applications of Internet, use of literature and databases for molecular sequences, as well as systems for telemedicine. Requires work in an open laboratory.

Prerequisite: BIIN 4000.

BIOL - Biology

BIOL 1001 - Principles of Plant Biology (3)

Introduction to the basic concepts of the structure and functioning of plants as live organisms. Emphasis on the study of the most important plants in the ornamental horticulture field. The organization, morphology, development and reproduction of ornamental plants in Puerto Rico and the Caribbean. This course is designed for students in the Associate Degree in horticulture sciences. Requires 30 hours of lecture and 30 hours of lab.

BIOL 1003 - Basic Biological Concepts (3)

Basic concepts of biology such as: cells, genetics, physiology, development and ecology. Not to be taken for credit by majors in biology. Requires 30 hours of lecture and 30 hours of lab.

BIOL 1006 - Fundamentals of Biology (4)

Basic concepts in biology. The anatomy and function of the human respiratory, cardiovascular, excretory, digestive, nervous, endocrine and immunological systems. This course cannot be taken to meet the Prerequisites of majors in natural sciences and nursing. Requires 45 hours of lecture and 30 hours of lab.

BIOL 1100 - Botany And Plant Physiology (3)

Identification of the main groups of plants, and their morphologic and reproductive characteristics. Understanding of the operation and the importance of the farming systems and ecosystems. Basic knowledge of the plant anatomy and physiology necessary to understand the development, growth, nutrition, and the answer of plants to the different environmental conditions.

BIOL 1101 - General Biology I (3)

Study of the characteristics and organization of living organisms. Emphasis on the structure of the main macro-molecules, cells, cellular cycle, mitosis and their metabolic processes. Use of scientific reasoning for the study of biological processes.

Corequisite: BIOL 1103.

BIOL 1102 - General Biology II (3)

Study of the fundamental concepts of meiosis, gametogenesis, reproduction and development. Includes the genetic processes of Mendelian inheritance, its molecular base, the genetic expression. The basic concepts of ecology and evolution and their relation with genetic aspects are discussed.

Prerequisite: BIOL 1101 and 1103.

BIOL 1103 - Biology Skills Laboratory I (1)

Development of skills and basic laboratory techniques applied to the study of the biopolymers and the cell. Includes safety rules and proper handling of laboratory equipment. The scientific method for the development of laboratory exercises is used. The writing of reports is required following the scientific formats. Requires 45 hours of presential closed lab.

Corequisite: BIOL 1101.

BIOL 1104 - Biology Skills Laboratory II (1)

Development of basic laboratory skills and techniques applied to the study of the concepts of cellular reproduction and development, classic and molecular genetics, evolution and ecology. Report writing is required following the scientific formats. Requires 45 hours of presential closed lab.

Prerequisite: BIOL 1101 and 1103. Corequisite: BIOL 1102.

BIOL 1116 - Fundamentals of Human Anatomy and Physiology (5)

Fundamental concepts of the structure and functions of different systems of the human body, including their pathophysiological consideration. Not to be taken for credit by majors in biology. Requires 60 hours of lecture and 45 hours of lab.

Prerequisite: BIOL 1101, 1103.

BIOL 2010 - Fundamentals of Vegetable and Animal Biology (4)

Integrated study of the main anatomic and physiological aspects in plants and animals. Emphasis on the contrast

between evolutionary processes, development and growth, as well as the ecological relationships between both groups. Requires 45 hours of lecture and 45 hours of lab.

Prerequisite: BIOL 1102, 1103.

BIOL 2013 - Biol 2013 Skills Laboratory II (1)

Application of laboratory techniques used for the qualitative and quantitative analysis of living organisms with emphasis on cells and biological macro-molecules. Use of statistical methods for the analysis and interpretation of generated data. Students are required to submit laboratory reports following established scientific formats. Requires 45 hours of lab.

Prerequisite: BIOL 1103, CHEM 1111.

BIOL 2100 - Introduction to Neurobiology (3)

Study of the basic anatomical and physiological concepts of the nervous system from the brain to the spinal cord. Emphasis on the nerve systems that process neuronal information.

Prerequisite: BIPS 1200.

BIOL 2103 - Zoology (3)

Study of the taxonomy, structure, function, reproduction and development of the main animal groups in reference to endemic species of Puerto Rico. Emphasis in the ecological and evolutionary interrelations. Requires 30 hours of lecture and 45 hours of presential or virtual closed lab.

Prerequisite: BIOL 1102 and 1104.

BIOL 2104 - Botany (3)

Study of the structure, function and reproduction of the main groups of plants, including endemic plants of Puerto Rico. Discussion of the importance of plants in the ecosystems and the socioeconomic impact. Requires 30 hours of lecture and 45 hours of presential or virtual closed lab.

Prerequisite: BIOL 1102 and 1104.

BIOL 2151 - Human Anatomy and Physiology I (3)

Fundamental concepts of histology and the integumentary, skeletal, muscular and nervous systems in the human body from the anatomical and physiological points of view. Their pathophysiological considerations are excluded. Not to be taken for credit by majors in biology. Requires 30 hours of lecture and 45 hours of lab.

Prerequisite: BIOL 1003.

BIOL 2152 - Human Anatomy and Physiology Ii (3)

Fundamental concepts of the endocrine, reproductive, cardiovascular, lymphatic, immunological, excretory, respiratory and digestive systems in the human body. Their pathophysiological considerations are excluded. Not be taken for credit by majors in biology. Requires 30 hours of lecture and 45 hours of lab.

Prerequisite: BIOL 2151.

BIOL 2153 - Biostatistics (3)

Application of statistics in biological research. Emphasis on the fundamental concepts of descriptive statistics for the analysis of grouped and not grouped data for a variable or multivariables. Application of the concepts of linear correlation, linear regression and probability distributions. Use of technological tools for statistical analysis.

Prerequisite: MATH 1500 or 1512 and BIOL 1102.

BIOL 2154 - Fundamentals of Microbiology (3)

Basic principles of microbiology emphasizing bacteria as a representative prokaryotic cell. Position of this cell in relation to the other microorganisms and viruses regarding sanitation and health in higher organisms. Not to be taken for credit by majors in biology. Requires 30 hours of lecture and 45 hours of lab.

Prerequisite: BIOL 1003 or 1102.

BIOL 2800 - Astrobiology (3)

Study of the origin, evolution, distribution, and search for life in the universe. Emphasis on the discussion of the origin and future of life, life in extreme environments, the natural and anthropogenic factors that could alter the evolution of the species on the planet and the search for extraterrestrial intelligence.

BIOL 3010 - Genetics (3)

Study of the processes related with heredity and its regulation. Includes from classical to molecular genetics and their relation with evolutionary processes. Use of prokaryote and eukaryote cells as models to illustrate these mechanisms. Discussion of ethical topics related to genetic manipulation.

Prerequisite: BIOL 1102, GEMA 1200.

BIOL 3100 - Foundations of Animal Science (3)

Study of the foundations of cattle production and related

industries. Includes the related study of the anatomy of the digestive system, nutrition and their metabolism; physiology of the reproductive system and its importance for our economy. Requires 30 hours of lecture and 45 hours of presential or virtual closed lab.

Prerequisite: BIOL 2103 or 2010 and 3010.

BIOL 3105 - General Microbiology (4)

Study of the microorganisms with emphasis in the bacteria. Includes the morphology, physiology, genetics, taxonomy, ecology, host-parasite relation and control of the microorganisms. Requires 45 hours of lecture and 45 hours of presential closed lab.

Prerequisite: BIOL 1102 and 1104 and CHEM 1111.

BIOL 3106 - Human Anatomy and Physiology (4)

Study of the physiological structures and mechanisms of the human body. Emphasis on the integration of the corporal systems; maintenance and alteration of homeostasis. Requires 45 hours of lecture and 45 hours of presential or virtual closed lab.

Prerequisite: BIOL 1102 and 1104.

BIOL 3200 - Foundations of Animal Nutrition (3)

Analysis of the nutrients required by animals, their functions, interrelations and the processes of their use. Study of the composition of forage and its use in the diet and its formulation. Requires 30 hours of lecture and 45 hours of presential or virtual closed lab.

Prerequisite: BIOL 3100.

BIOL 3205 - Economic Zoology (3)

Economic exploitation of vertebrates and invertebrates. Emphasis on the reproduction, raising and handling of animals for consumption. Breeding and conservation of animals for the study of zoology. Requires 30 hours of lecture and 45 hours of lab.

Prerequisite: BIOL 2010.

BIOL 3213 - Parasitology (3)

Study of the morphology, classification and life cycles of the parasites of the human being. The epidemiological, pathogenical aspects and their symptomatology are included. Emphasis in the hospice-parasitic relations. Requires 30 hours of lecture and 45 hours of presential or virtual closed lab.

Prerequisite: BIOL 1102.

BIOL 3214 - Entomology (3)

Study of the structure, physiology, taxonomy, behavior, ecology and economic importance of insects. Requires 30 hours of lecture and 45 hours of lab. Includes field studies.

Prerequisite: BIOL 2103.

BIOL 3216 - Animal Behavior (3)

Study of the internal and external factors responsible for the regulation, development, and variation of animal behavioral patterns. Requires 30 hours of lecture and 45 hours of lab.

Prerequisite: BIOL 2103.

BIOL 3219 - Biology of Invertebrates (3)

Study of the morphology, physiology, ecology and systems of the representative invertebrate groups. Emphasis on species native to Puerto Rico. Requires 30 hours of lecture and 45 hours of lab.

Prerequisite: BIOL 2103.

BIOL 3220 - Biochemistry (3)

Study of chemical processes in living organisms. It includes the structure and detailed function of the main biomolecules, the chemical and physical properties of proteins, carbohydrates and lipids, the kinetics and enzymatic mechanisms. Emphasis on the balances and thermodynamics of metabolic processes.

Prerequisite: CHEM 2222, BIOL 1101 and BIOL 1103.

BIOL 3255 - Economic Botany (3)

Economic importance of plants emphasizing the use of their products, cultivation and the relationship to human history. Requires 30 hours of lecture and 45 hours of lab.

Prerequisite: BIOL 2010.

BIOL 3257 - Systematic Botany (3)

Classification and nomenclature of vascular plants. The laboratory includes field trips. Requires 30 hours of lecture and 45 hours of lab.

Prerequisite: BIOL 2010.

BIOL 3309 - Food Microbiology (3)

Study of the interactions between the microorganisms and foods; control techniques of microorganisms and fermented food production. Includes the diseases caused by microorganisms in foods, aspects of health and quality

control. Requires 30 hours of lecture and 45 hours of presential or virtual closed lab.

Prerequisite: BIOL 3105.

BIOL 3405 - Immunology (3)

Study of defense mechanisms of vertebrates at the cellular and molecular level. Description of the morphology and functions of the cells that participate in the immunological processes and of their products, such as antibodies, complements and other substances. Study of the structures and functions of immunoglobulins. Characterization of the reaction between antigens and antibodies, the regulation of the immunological system and the genetic controls. Requires 30 hours of lecture and 45 hours of lab.

Prerequisite: BIOL 3105.

BIOL 3454 - Plant Anatomy (3)

Characteristics of cells and tissues of vascular plants. Requires 30 hours of lecture and 45 hours of lab.

Prerequisite: BIOL 2010.

BIOL 3503 - Ecology (3)

Study of the biotic and abiotic factors limiting the distribution and abundance of organisms and their relation with the evolutionary processes. Emphasis on the adaptations of organisms with their environment and the structure of the different organizational levels that make up the biosphere from the species to the biome. Requires 30 hours of lecture and 45 hours of presential or virtual closed lab.

Prerequisite: BIOL 2103 and 2104 or BIOL 2010.

BIOL 3504 - Environmental Health (3)

Analysis of the interrelation between the environment and the health of the human being, as well as the effect of contamination by wastes. Emphasis in the factors of risk and biological, physical and social implications, as well as prevention and the mechanisms to reduce the environmental impact.

Prerequisite: BIOL 1102 and GEMA 1200.

BIOL 3505 - Environmental Laws, Policies and Regulations (3)

Legal aspects and environmental policy, including their history and the scope of laws and regulations. The evaluation of an Environmental Impact Statement is required.

Prerequisite: BIOL 3504 or o EVMA 1110.

BIOL 3601 - Comparative Anatomy and Physiology I (3)

Comparative analysis of the concepts, adaptations, form and function of the anatomy and physiology of domestic, exotic and laboratory mammals. It includes the integumentary, skeletal, muscular, cardiovascular and respiratory systems. It requires 30 lecture hours and 45 laboratory hours.

Prerequisite: BIOL 2103 or 2010 and CHEM 2212.

BIOL 3602 - Comparative Anatomy and Physiology Ii (3)

Comparative analysis of the concepts, adaptations, form and function of the anatomy and physiology of domestic, exotic, and laboratory mammals. It includes the digestive, urinary, endocrine, reproductive, nervous and lymphatic systems. It requires 30 lecture hours and 45 laboratory hours.

Prerequisite: BIOL 3601.

BIOL 3904 - Toxicology (3)

Study of the principles of toxicokinetics and toxicodynamics, methods of analysis and evaluation of mutagenic, teratogenic and carcinogenic agents. Emphasis on hepatoxicology and neurotoxicology.

Prerequisite: BIOL 3106, CHEM 2222.

BIOL 4104 - Plant Physiology (3)

Fundamental functions of high-order plants, emphasizing the relationships of water, photosynthesis and reproduction. Requires 30 hours of lecture and 45 hours of lab.

Prerequisite: BIOL 2010.

BIOL 4105 - Fundamentals of Geographic Information Systems (GIS) (3)

Analysis of GIS concepts by means of computerized systems that process and examine spatial data. Discussion of geography, cartography and space analysis concepts based on geographic locations. Application of space analysis using data and maps of Puerto Rico and other parts del the world. Requires 45 hours of lecture/lab. Requires additional time in an open lab.

BIOL 4109 - General Physiology (3)

Analysis of the functions and processes exhibited by

animals. Includes the concepts of transportation, respiration, digestion, excretion, reproduction, and hormonal, muscular and nervous control. Requires 30 hours of lecture and 45 hours of lab.

Prerequisite: BIOL 2103, CHEM 2222.

BIOL 4200 - Neuroscience (3)

Discussion of topics related to neuroscience that contribute to the development of the field, with emphasis on basic neural mechanisms, synaptic communication, and the biological perspective of various neurological behaviors and disorders.

Prerequisite: BIOL 3106 o BMSC 3012.

BIOL 4303 - Mycology (3)

The morphological, physiological and taxonomical study of fungi. Emphasis on their economic, medical, industrial and environmental importance. Requires 30 hours of lecture and 45 hours of lab.

Prerequisite: BIOL 3105.

BIOL 4304 - Medical Mycology (3)

Fungi pathogenic to human beings with emphasis on the epidemiology, clinical aspects, diagnosis and prevention. Requires 30 hours of lecture and 45 hours of lab.

Prerequisite: BIOL 3105.

BIOL 4305 - Medical Microbiology (3)

Microorganisms which are pathogenic to human beings, emphasizing epidemiology, clinical conditions, diagnosis and prevention. Requires 30 hours of lecture and 45 hours of lab.

Prerequisite: BIOL 3105.

BIOL 4306 - Virology (3)

Introduction to the concepts of the biology of viruses of bacteria, plants and animals, including morphological, genetic and epidemiological aspects. Emphasis on the principles of molecular biology that regulate the cycle of viral infection, the cellular metabolism and the cellular and systemic defense mechanisms.

Prerequisite: BIOL 3010, 3105.

BIOL 4307 - Microtechniques (2)

The fixation, preservation and histological and histochemical preparation processes using different species of organisms. Requires 15 hours of lecture and 45 hours of lab.

Prerequisite: BIOL 3106.

BIOL 4403 - Evolution (3)

The processes responsible for the evolution of species. Evidence and contributions of paleontology, biogeography, molecular biology, genetics and ecology and their importance in the development of Western thought.

Prerequisite: BIOL 3010.

BIOL 4405 - Embryology (3)

Analysis of the anatomy of the embryogenesis of vertebrates with specific emphasis in human beings. Includes the fertilization, implantation, gastrulation, neurulation and organogenesis.

Prerequisite: BIOL 3106 or BMSC 3012.

BIOL 4407 - Human Anatomy (3)

Theoretical and practical study of tissues and organs and their interaction in the systems of the human body. Requires 30 hours of lecture and 45 hours of lab.

Prerequisite: BIOL 2103.

BIOL 4408 - Comparative Functional Anatomy (3)

Comparative study of vertebrates from the point of view of the relationship between structure and function. Systems that have evolved and diversified as a result of environmental conditions. Requires 30 hours of lecture and 45 hours of lab.

Prerequisite: BIOL 3106.

BIOL 4433 - Industrial Microbiology (3)

Study of microorganisms in industrial processes. Emphasis on the production of metabolites, quality control and the regulations of the pertinent agencies. Requires 30 hours of lecture and 45 hours of lab.

Prerequisite: BIOL 3105 and CHEM 2212.

BIOL 4494 - Pharmacology (3)

The effects of medicine on the human body. Discussion of classification, action mechanisms, dosage, side effects, contraindications and interactions with other prescription drugs.

Prerequisite: BIOL 3106 or BMSC 3012 and CHEM 2222.

BIOL 4503 - Conservation and Management Of Natural Resources (3)

Application of management techniques in the conservation of natural resources. Emphasis on water resources, coastal and forest resources, soils, flora and fauna. Field trips are required.

Prerequisite: BIOL 3503.

BIOL 4600 - Histology (3)

Function and structure of tissues, individual cells and their integration in the systems. Requires 30 hours of lecture and 45 hours of lab.

Prerequisite: BIOL 3106.

BIOL 4604 - Cellular and Molecular Biology (3)

Study of the cell and its components, the relationship between cell structures, their functions and metabolic processes, cell communication and the flow of molecular information. Discussion of experiments and modern research techniques that have contributed to the study of the cell.

Prerequisite: BIOL 3010 and CHEM 2221.

BIOL 4605 - Cellular and Molecular Biology Skills Laboratory (2)

Evaluation and use of specialized methodology in cellular and molecular Biology. Application of techniques of recombinant ADN, protein analysis, culture of cells, and bioinformatics. Research experiences and the writing of reports are performed using scientific formats. Requires 60 hours of presential or virtual closed lab.

Prerequisite: BIOL 2153, 3105 and CHEM 2221. Corequisite: BIOL 4604.

BIOL 4700 - Agricultural and Environmental Biotechnology (3)

Analysis of the effects and applications of the biotechnology in food production, in human health and in the preservation of the environment. Includes the study of theoretical foundations in biotechnology, current biotechnological strategies and the products that are generated through biotechnology. Discussion of the ethical, legal and economic aspects that arise from the development and implantation of biotechnology in society.

BIOL 4905 - Introduction to Pathology (3)

Anatomical and histological alterations occurring in the different human systems, including their etiology, description and clinical aspects.

Prerequisite: BIOL 3106 or BIOL 4407.

BIOL 4907 - Health Education (3)

Educational methods and techniques for achieving change in people's attitudes on health matters.

Prerequisite: BIOL 3504.

BIOL 4909 - Public Health (3)

Study of the fundamental concepts of public health. Emphasis in the magnitude, distribution and causes of diseases in the human populations. Includes the transmission mechanisms of diseases, their incidence and frequency.

Prerequisite: BIOL 2153.

BIOL 4912 - Practicum in Biology (3)

Supervised work practice in industries, research laboratories, governmental agencies, hospitals or other enterprises related to the different areas of study offered in biology. A minimum of 135 hours is required as well as periodical meetings with the course coordinator.

Prerequisite: Have approved all major courses in Biology at the bachelor's level and the authorization of the department's chair.

BIOL 4953 - Research Methods (3)

Identification and utilization of the scientific method in the solution of problems. Setting up of hypothesis, bibliographical search, design and implementation of the experiment, data interpretation and writing scientific papers. Requires 30 hours of lecture and 45 hours of presential or virtual closed lab.

Prerequisite: BIOL 2153 and 3105 and CHEM 2221.

BIOL 4955 - Integration Seminar (1)

Integration of the knowledge acquired by students through oral and written presentations of creative work, using scientific papers as primary base in their specialization in the area of biology.

Prerequisite: 30 credits in Biology.

BIOL 4960 - Bioethics (3)

Survey of the ethical considerations in life sciences, in scientific research as in their applications. Discussion of the responsibility in research with human and animal participants, as well as the ethical dimensions of other

practices carried out in life sciences. Analysis of cases and application of bioethical principles and applicable regulations.

Prerequisite: Have approved at least 90 credits.

BIOT - Biotechnology

BIOT 2015 - Genome Biology of Marine Organisms (3)

Analysis of the application of genomic tools for investigate the genotype and phenotype of marine organisms. Emphasis on the evaluation of the different tools available genomics. It requires 30 hours of lecture and 45 laboratory hours.

BIOT 2160 - Molecular Genetics (3)

Discussion of the structure and function of nucleic acids in agreement with their role in the flow of genetic information. Analysis of the molecular events associated with the duplication, transcription, translation and control of the genetic expression. In addition, patterns of inheritance and some principles of human genetics are discussed. Requires 45 hours of lecture-lab.

Prerequisite: BIOL 1102.

BIOT 2250 - Biomanufacturing (4)

Analysis of the processes for the manufacturing of biological products that meet the Prerequisites of recovery, purification and quality of the biotechnological industry. Emphasis on the discussion of the regulations established by the regulating agencies, validation and operational aspects to meet the quality Prerequisites of the final product. Requires 3 hours per week of lecture and 3 hours per week of lab.

Prerequisite: BIOL 3105.

BIOT 3010 - Marine Biochemistry (3)

Discussion of the understanding of biochemical adaptations and physiological in different marine organisms. Emphasis on the study of the anthropogenic activities that affect these processes. Requires 30 hours of lecture and 45 hours of laboratory.

BIOT 3020 - Marine Microbiology (3)

Analysis of recent developments in areas of ecology marine microbial. Discussion of the structure and function of diverse microbial communities in the ocean. requires 30 lecture hours and 45 laboratory hours.

BIOT 3025 - Biological Oceanography (3)

Study of the fundamentals of biological oceanography. Emphasis on the investigation of the dynamics and characteristics of ocean systems. Includes aspects of chemistry and physics of the oceans. Requires 30 hours of lecture and 45 hours from laboratory

BIOT 3042 - Comparative Genoma (3)

Analysis of gene network concepts and the evolution of genomes of marine organisms and their symbionts. emphasis on the use of available bioinformatics tools. It requires 30 lecture hours and 45 laboratory hours.

BIOT 3250 - Molecular Biotechnology (3)

Analysis of the principles and the application of molecular biotechnology techniques used in the genetic manipulation of prokaryote and eukaryote organisms. Application of techniques of recombinant DNA, restriction enzymes, vectors, cloning, sequencing, and amplification of DNA. Discussion of the ethical and legal aspects related to biotechnology. Requires 30 hours of lecture and 45 hours of closed lab.

Prerequisite: BIOL 3010, 3105.

BIOT 3360 - Transgenic Plants and Food Security (3)

Analysis of biotechnology applications in food production. Emphasis on the impact of transgenic plants on human health and the environment. Discussion of the ethical, legal, economic and regulatory aspects that arise from the development and implementation of biotechnology in society. Requires 45 hours of conference.

Prerequisite: BIOT 3250, CHEM 2222 and MATH 1500.

BIOT 3370 - Biotechnology of Plants (4)

Analysis of the fundamentals of the molecular genetics of plants and the development of technologies and techniques for genetic transformation. Emphasis on the differentiation of the transformations via chloroplast and nuclear. Study of the function of genes and genomes in the development of transgenic systems. Requires 45 hours of lecture and 45 hours of closed laboratory.

Prerequisite: BIOT 3250, CHEM 2222 and MATH 1500.

BIOT 3750 - Recombinant DNA Technology (3)

Advanced analysis of the techniques used for genetic manipulation and the expression in cells and complex organisms. Emphasis on the use of bioinformatics and bimolecular characterization methods. Discussion of

bioethics and legal aspects related to biotechnology. Requires 30 hours of lecture and 45 hours of closed lab.

Prerequisite: BIOL 3010, 3250.

BIOT 397_ - Special Topics (3)

Analysis and discussion of specific issues related to biotechnology. Requirement: Authorization of the Director of Department.

BIOT 4620 - Tissue Culture and Technical Applications (3)

Analysis of the methodology of the culture of cells coming from mammals, plants and insects. Discussion of cellular culture applications in the biotechnology industry and their ethical implications. Emphasis on the Prerequisites of clean rooms, sterile clothes, aseptic techniques, instrumentation, classification of cellular lines, detection of contamination and quality controls. Application of cellular culture techniques and techniques for the detection of components or cellular products. Requires 30 hours of lecture and 45 hours of lab.

Prerequisite: BIOL 4604.

BIOT 4710 - Agricultural and Environmental Biotechnology (3)

Analysis of the effects and applications of biotechnology in food production, human health and preservation of the environment. Includes the study of the theoretical and practical foundations in the propagation of vegetable cultivations, current biotechnological strategies, products generated, and the new technology available in the agricultural and environmental areas. Discussion of the ethical, legal and economic aspects that arise from the development and implementation of biotechnology in society. The course consists of 30 hours of lecture and 45 hours of closed lab.

Prerequisite: BIOT 3750, BIOL 4433.

BIOT 4900 - Genomic Transformation for The Improvement of Crops (4)

Analysis of the genetic techniques associated with the transformation of plants for the improvement of agricultural products and the control of pests. Emphasis in the study of the theoretical and practical foundations in the propagation of vegetable crops and current biotechnological strategies. Comparison of organic products with those generated by transformation. Requires 45 hours of lecture and 45 hours of closed laboratory.

Prerequisite: BIOT 3250, CHEM 2222 and MATH 1500.

BIOT 4928 - Protein Analysis and Purification (3)

Analysis of the methods used in the separation, purification, filtration and drying of natural and recombinant proteins. Application of the techniques of column chromatography, centrifugation, membrane separation, and electrophoresis, filtration of tangential flow and dried protein analysis. Application of statistics to analyze

BIOT 4954 - Research Methods in Biotechnology (3)

Application of the scientific method for the logical handling of problems in biotechnology. Development and training in basic laboratory techniques and in research. Scientific data processing, computerized statistic analysis and presentations of preliminary results of the research projects. Requires 30 hours of lecture and 45 hours of closed lab.

Prerequisite: 15 credits in natural sciences in the areas of biology, chemistry or biotechnology and authorization of the Department's chair.

BIPS - Biopsychology

BIPS 1200 - General Biopsychology (3)

Study of the relationship between the nervous system and behavior, learning, memory, cognition, and perception. Study of the fundamental notions of the biological basis of sensations, motivation and behavior, among others.

Prerequisite: BIOL 1102, PSYC 1051.

BIPS 3900 - Neuroscience of Human Behavior (3)

Discussion of the biological basis underlying human behavior with emphasis on neuroanatomy and neurochemistry. Analysis of neurophysiological processes related to vision, the auditory system, sleep, and language production. Emphasis on the influence of different brain structures on emotional states, learning, memory, and mental disorders.

Prerequisite: BIOL 2100, BIOL 3106, and PSYC 1051 or BMSC 3011 and BMSC 3012.

BIPS 4900 - Integrative Seminar on Biopsychology (3)

Integration of knowledge and skills acquired in courses throughout the program. Analysis of case studies and exploration of topics of interest in biopsychology. Requires submission of written papers and oral presentations.

Prerequisite: CHEM 2222, BIPS 3900, PSYC 3200, and

PSYC 4234. .

BMSC - Biomedical Sciences

BMSC 2210 - Human Genetics (3)

Fundamental concepts of human genetics, from the perspective of structure, function and transmission of genes; including interaction gene-gene and gene-environment. Emphasis on the molecular aspects of human inheritance, genetic etiology of diseases and research techniques in human genetics.

Prerequisite: BIOL 1102.

BMSC 3011 - Fundamentals of Human Anatomy and Physiology I (3)

Fundamental concepts of histology and the integumentary, skeletal, muscular and nervous systems of the human body from the anatomical and physiological point of view, including pathophysiological considerations of these. Requires 30 hours of lecture and 45 hours of lab.

Prerequisite: BIOL 1102.

BMSC 3012 - Fundamentals of Human Anatomy and Physiology Ii (3)

Fundamental concepts of the endocrine, reproductive, cardiovascular, lymphatic, immune, excretory, respiratory and digestive systems of the human body, including pathophysiological considerations. Requires 30 hours of lecture and 45 hours of lab.

Prerequisite: BMSC 3011.

BMSC 4015 - Biochemistry of Human Physiology (3)

Study of metabolic transformations that chemical compounds and biopolymers undergo at cellular level. Physiological studies that include bioenergetics, vitamin and hormone metabolism, anabolism and catabolism of carbohydrates, lipids and proteins, production of energy through the cycle of tricarbocyclic acid and oxidation phosphorilation.

Prerequisite: CHEM 2222.

BMSC 4020 - Biomedical Ethics (3)

Ethical aspects in biomedical sciences. Analysis, discussion and application of ethics in situations of conflict in medicine and biomedical research.

Prerequisite: Have completed 24 credits in the area of Biomedical Sciences.

CARD - Cardio-Respiratory Care

CARD 1130 - Cardio-Respiratory Care I (3)

This course is designed to provide the student with the opportunity of applying the knowledge and necessary skills for the basic and advanced evaluation of patients requiring pharmacotherapy with aerolized medicines, oxygen, oxygen-helium, nitric oxide, humidity and aerosol in routine situations, as well as in emergency situations with adults and children. Introduction to pulmonary expansion therapy and to incentive spirometry. Requires 30 hours lecture and 45 hours of lab.

Corequisite: CARD 1210, BIOL 1003.

CARD 1210 - Introduction to Theory and Practice in Cardio- Respiratory Care (3)

History, ethical-legal aspects and the standards of the profession of Respiratory Therapy. Basic principles of cardio-respiratory care in clients of different ages. Introduction to the normal cardio-respiratory mechanisms, taking and reporting vital signs and aseptic techniques. Students will develop and apply the necessary skills for the basic evaluation of patients, related to the safe and proper handling of medical gases. Requires 30 hours of lecture and 45 hours of lab.

Corequisite: BIOL 1003.

CARD 1220 - Pharmacology Applied to Cardio-Respiratory Care (2)

Principles of pharmacology, definitions, terms and concepts most commonly used in clinical practice related to the care of critical conditions and to cardio-respiratory care in general. The actions, doses, reactions and contraindications of drugs used in the treatment of cardiopulmonary disorders, as well as the effect in the cardio-respiratory systems are discussed.

Prerequisite: GEMA 1000, CARD 1210. Corequisite: CHEM 2110, BIOL 2151, 2154.

CARD 1231 - Cardio-Respiratory Care II (3)

Course directed to enable students in the advanced aspects of the respiratory care. Handling of the critically ill will be emphasized. Students will be exposed to the basic and advanced techniques in the management of the natural and artificial aerial routes, pulmonary fisiotherapy, bronchial therapy bronchial hygiene, resucitation in infants, children and adults, and the technology used in the care of cardio-respiratory cases. Requires 30 hours of lecture and 45 of lab.

Corequisite: CARD 1130, 1210.

CARD 2110 - Cardio-Respiratory Pathophysiology (3)

Discussion of cardiopulmonary pathophysiology, recognition, diagnosis and handling of the more common pulmonary infections, the pulmonary obstructive disease: COPD, asthma, emphysema and related diseases. Interstitial disease, vascular pulmonary neoplasmas, neuromuscular diseases, and cardiac congestive failure, among others. Discussion of respiratory and cardiac failure and the cardio-respiratory care in each of those conditions. Introduction to the pulmonary function and basic spirometry as a base for subsequent courses. Corequisite: BIOL 2152.

Corequisite: BIOL 2152.

CARD 2120 - Diagnostic Tests and Pulmonary Function (2)

This course exposes the student to advanced technology, pulmonary function tests, extraction of arterial blood, analysis of pH and arterial gases in blood, recognition and pharmacological treatment of fatal arrhythmias and electrocardiography. Introduction to the control of infections, maintenance, calibration, basic quality control and regulation for specialized equipment. Requires 15 hours of theory and 45 hours of lab.

Prerequisite: CARD 1210, 1220, BIOL 2151, 2154, CHEM 2110, PHYS 1013. Corequisite: CARD 2110, 2130, 2233, BIOL 2152.

CARD 2140 - Cardio-Respiratory Care Clinics and Rehabilitation (3)

Clinical community experience of clients with chronic cardio-respiratory conditions. In addition, students are exposed to the development, implementation and provision of services of respiratory care in the home. Examination of risk factors that may affect the community. Requires 30 hours of lecture and 45 hours of lab. Prerequisites: CARD 1220, 1231. Corequisites: CARD 2120, 2233, 2234.

Prerequisite: CARD 1220, 1231. Corequisite: CARD 2120, 2233, 2234.

CARD 2190 - Integration of Fundamental Knowledge (2)

This course is designed to integrate the fundamental knowledge of cardio-respiratory care through the different stages of growth and development.

Prerequisite: CARD 1130, 2110, 2120, 2233. Corequisite: CARD 2111, 2131, 2140, 2910.

CARD 2233 - Mechanical Ventilation (5)

Study of the basic and advanced principles of mechanical ventilation and its application in respiratory care. Emphasis on the technical handling of the new generation of modern ventilators. Development of skills for the use of mechanical ventilation with new parameters in adult, pediatric and neonatal patients. Requires 75 hours of theory. Prerequisites: CARD 1220, 1231. Corequisite CARD 2140, 2234.

Prerequisite: CARD 1220, 1231. Corequisite: CARD 2140, 2234.

CARD 2234 - Practice in Mechanical Ventilation (2)

Supervised clinical practice for the development of basic and advanced skills in mechanical ventilation in cardio-respiratory care. Application of the technical procedures when using first generation ventilators and modern ones of the new generation with emphasis on ventilator parameters for handling the patient. Requires 90 hours of practice.

CARD 2910 - Integrated Practice I (4)

Students will intervene with patients in different health scenarios. Emphasis on patients in the areas of medicine, surgery, pediatrics and emergency room. Requires 180 hours of lab. Prerequisites: CARD 1210, 2120.2130, 2233, BIOL 2152, 2154. Corequisites: CARD 2111, 2131, 2140, 2190.

Prerequisite: CARD 1210, 2120, 2130, 2233, BIOL 2152, 2154. Corequisite: CARD 2111, 2131, 2140, 2190.

CHAP - Institutional Chaplaincy

CHAP 1101 - History of Chaplaincy (3)

Study of the history of chaplaincy from its origins to the present time. Emphasis on Puerto Rican institutional chaplaincy. Discussion of the contributions of the great thinkers and the Movement of the pastoral care.

CHAP 1102 - Theory of Institutional Chaplaincy (3)

Study of the function of the chaplain as part of patient care. Development of skills for the design of a strategic plan of pastoral/spiritual care for each scenario.

CHAP 2101 - Spirituality, Religion and Mental Health (3)

Analysis of the difference between religion and the contemporary theories of spirituality in its relationship with mental health. Analysis of the group process and the narrative analysis as a didactic method of the course.

CHAP 2102 - Clinic-Theological Reflection Methods of Pastoral Care (3)

Discussion of the contributions that are made to the clinical-theological reflection of spiritual/pastoral care, such as the Quadrilateral Method of Juan Wesley; the Correlational Method revised by Paul Tillich; the Method of Whitehead and the Method to see, judge, act, celebrate and evaluate of Casiano Floristán. Analysis of cases.

CHAP 2103 - Theories of Pastoral Clinical Education (3)

Discussion of the psychological, sociological, theological theories and the theoretical practical postulates of the pastoral-clinic theology. Application of the theories in the pastoral care process. Analysis of the impact that the personal, social and cultural perspective, as well as the theological-religious perspectives could have on the chaplain-patient relationship.

CHAP 2104 - Didactic Theories and their Clinical Application to Chaplaincy (3)

Discussion of the techniques based on the theories of Anton T. Boisen, Paul W. Pryser, Wayne E. Oates and Seward Hitner, among others, that help students develop a better understanding of their role as providers of clinical pastoral care in varied scenarios. Analysis of the interaction between religious and theological beliefs, the values and the attitudes of students and their role when offering pastoral care.

CHAP 2105 - Intervention and Management of Crisis (3)

Development of techniques for the management of crisis in cases of loss, depression, gender violence, the experience of death and other topics of clinical interest.

CHAP 2106 - Intervention in Pastoral Care (3)

Discussion of the different intervention methods and theories that are consistent with pastoral care, in agreement with the parameters and standards established by the Association of Clinical Pastoral Education (ACPE, for its abbreviation in English). Includes the formation of a pastoral identity, the development of the abilities to listen with attention, to interpret and to confront in agreement with the goals developed in the intervention plan.

CHAP 2107 - Pastoral Care and Social Crisis (3)

Analysis of the pastoral function within the social-political-spiritual and economic context from the point of view of the Model to see, judge, act and celebrate of Casiano Floristán as a provider of see-psico-social-spiritual aid in crisis situations. Study of cases to apply techniques of pastoral care and mediation of conflicts.

CHAP 2108 - Professional Practice (3)

Supervised practice in a real work scenario related to chaplaincy. This will be performed under the supervision of a faculty member and a qualified professional of the agency or organization where the student is located. Requires 135 hours of practice and approval of the Director of the Department or his representative. In addition, students must have passed the courses of the major (CHAP).

Corequisite: CHAP 2109.

CHAP 2109 - Integration Seminar (3)

Critical analysis of situations related to spiritual/pastoral care and the process of aid for dealing with clients.

Prerequisite: Authorization of the department's chair or representative. Corequisite: CHAP 2108.

CHEM - Chemistry

CHEM 1000 - Fundamentals of Applied Chemistry (3)

Definition of the basics of forensic chemistry, nanotechnology and biochemistry. Description of the use of the principles of applied chemistry in the work environment. Use of scientific reasoning in the study of chemical processes.

CHEM 1111 - General Chemistry I (4)

Study of matter, its relationship with energy, its properties and its behavior from a macroscopic and microscopic qualitative approach. Formulation of basic concepts of chemistry through laboratory experience. Requires 45 hours of lecture and 45 hours of closed presential lab.

Prerequisite: GEMA 1200.

CHEM 2110 - General Chemistry for Health Sciences (4)

Theoretical and practical study of the fundamental principles of the structure and behavior of matter, with emphasis on the state of organic molecules of biological importance and their metabolic reactions. Practice of analysis techniques will be emphasized in the laboratory. Requires 45 hours of lecture and 45 hours of lab.

Prerequisite: GEMA 1000.

CHEM 2115 - General Chemistry for Engineers (4)

Chemistry concepts and applications, relative to: experimental measurements, atomic and molecular theories; thermodynamics; properties of gases, kinetic molecular theory; liquid and solid states, their intermolecular forces; colligative forces and properties. Aqueous-media reactions: reduction/oxidation (red-ox), precipitation, acid-base combination. Requires 45 hours of lecture and 45 hours of lab. Not to be taken for credit by biology or chemistry majors.

Prerequisite: MATH 1500 or 1512.

CHEM 2120 - Chemistry Applied to Agricultural Science (3)

Study of the basic concepts of chemistry and its applications related to the causes and effects of reactions and changes that affect animal and plant growth and production. Formulation of basic concepts of chemistry through laboratory experiences. It requires 45 hours of lecture and 45 hours of closed laboratory.

Prerequisite: GEMA 1200.

CHEM 2212 - General Chemistry II (4)

Fundamental principles of chemistry and its applications with emphasis on the quantitative study of the structural and energetic properties associated with matter and its transformations. Includes topics related to solid and liquid states, solutions, thermodynamics, chemical kinetics, equilibrium and electrochemistry among others. Requires 45 hours of lecture and 45 hours of closed presential lab.

Prerequisite: MATH 1500 or MATH 1511 and CHEM 1111.

CHEM 2221 - Organic Chemistry I (4)

Theoretical and experimental study of the physical, chemical and spectroscopic traits of organic compounds. Emphasis on nomenclature, isomerism, synthesis and reactions of hydrocarbons, alcohols, halogenuros of alkyl and aromatic compounds. Requires 45 hours of lecture and 45 hours of closed presential lab.

Prerequisite: CHEM 2212.

CHEM 2222 - Organic Chemistry II (4)

Theoretical and experimental study of organic compounds. Emphasis on spectroscopy, nomenclature, isomerism, synthesis and reactions including mechanisms of ethers, organometallic, carbonílicos and carboxylic, compounds amines and composed of biological interest. It includes in addition, the study of the cicloadición Diels-Alder according to the with the frontier orbital theory. Requires 45 hours of lecture and 45 hours of closed presential lab.

Prerequisite: CHEM 2221.

CHEM 2223 - Development and Application of Didactic Materials in Chemistry (3)

Development of instructional materials, such as: simple laboratory equipment and chemistry-physical models. Application of these materials as educational tools in the classroom. Requires 45 hours of lecture/lab.

Prerequisite: CHEM 2222.

CHEM 2250 - Chemistry and Soil Structure (3)

Analysis of soils, their physical and chemical properties, topography, erosion, their effects and fertility. Categorization of the viability of different crops and their agronomic classification. Requires 30 hours of lecture and 45 hours of closed laboratory.

Prerequisite: CHEM 2222 and MATH 1500.

CHEM 397_ - Special Topics (3)

Analysis and discussion of specific topics in chemistry.

CHEM 3000 - Environmental Chemistry (3)

Environmental contamination and conservation with emphasis on the chemical, biological and physical processes involved.

Prerequisite: CHEM 2212.

CHEM 3010 - Environmental Chemical Analysis (3)

Laboratory techniques for the analysis of water, soil and air. Methods commonly used in field and laboratory sampling and analysis. Description of the most recent technology for analysis and restoration. Requires 30 hours of lecture and 45 hours of lab. Not to be taken for credit by majors in chemistry and chemical technology.

Prerequisite: CHEM 2212.

CHEM 3180 - Chemical Literature and Information Retrieval (1)

Training in the use of chemical literature. Development of bibliographic search strategies in primary and secondary sources of information through manual and computerized techniques. Practical applications and use of principal bibliographic sources.

Prerequisite: CHEM 2221.

CHEM 3230 - Structure Determination by Spectroscopic Analysis (3)

Analysis of the information obtained from the main spectroscopic methods (Infrared, Nuclear magnetic resonance uni-y multidimensional, Masses and Ultraviolet) to determine the molecular structure of chemical compound. Prerequisites: CHEM 2222.

Prerequisite: CHEM 2222.

CHEM 3320 - Analytical Chemistry (4)

Study, statistical treatment and applications of quantitative analysis. Emphasis on volumetric, gravimetric and electroanalíticos methods. Includes, in addition, the fundamentals and the basic applications of the methods of spectroscopic analyzes and separation. Requires 45 hours of lecture and 45 hours of closed presential lab.

Prerequisite: CHEM 2212, MATH 1500 or 1512.

CHEM 3350 - Pharmaceutical Chemistry (3)

Analysis of the historical development of the pharmaceutical industries. It includes its regulations, drug approval processes, and manufacturing and quality control processes.

Prerequisite: CHEM 2212.

CHEM 3351 - Laboratory of Pharmaceutical Chemistry (1)

Techniques for manipulating and analyzing pharmaceutical products in a practice scenario. Requires 45 hours of lab.

CHEM 3360 - Food Chemistry (3)

Study and state of dispersion of the components of foods: water, carbohydrates, proteins, lipids, enzymes, inorganic nutrients and those responsible for color and flavor. Study of the toxicology of compounds inherent to foods and those that are generated by means of their processing.

Prerequisite: CHEM 2222.

CHEM 3370 - Green Chemistry (3)

Introductory study of the basic chemical concepts and methods focused on process design and product synthesis that impacts the environment in a benign way. Includes the discussion and analysis of principles and the historical development of green chemistry, evaluating advantages and disadvantages. Analysis of examples of the application of green chemistry, at the academic and industrial levels by evaluating its economic and environmental impact.

Prerequisite: CHEM 2222.

CHEM 3380 - Introduction to Nanotechnology (3)

Theoretical analysis among the physical, chemical and structural characteristics of materials on a nanometric scale based on the differences between their properties and those of the materials of greater volume. Study of the formation and manipulation of nanotecnológicos materials. Includes applications in medicine, technology and the power sector.

Prerequisite: CHEM 2222, 3320.

CHEM 3390 - Biotechnology for Chemists (3)

Analysis of the fundamental concepts and the basic principles on the chemical manipulation of the nucleic acids with emphasis on the recombinant techniques of Ácido Desoxirribonucleico (ADN). Discussion of the biotechnological applications to systems of genetic expression, protein modification, industrial processes and biorremediación.

Prerequisite: CHEM 2222, 3320, BIOL 1101, 1103.

CHEM 3400 - Computation Laboratory and Its Applications to Chemistry (2)

Use and management of the computer in the field of chemistry aimed at solving problems and conducting experiments. It includes the writing of technical reports and the search, access and management of scientific information and chemical compounds. Requires 60 hours of closed presential laboratory.

Prerequisite: CHEM 2221.

CHEM 3420 - Environmental Analytical Chemistry (4)

Application of methodologies of sampling and chemical analysis for components and pollutants of natural waters, soils and air. Emphasis on wet chemistry procedures. It requires 30 hours of lecture and 45 hours of laboratory.

Prerequisite: CHEM 3320.

CHEM 3900 - Research in Chemistry (1 to 3)

Practical work of chemical research in a laboratory. Training through the development of a project, using the scientific method and modern research techniques. Requires submission of an oral and written report of the work. Prerequisites: CHEM 2221, authorization of the department director and the professor in charge of the research.

CHEM 3910 - Physical Chemistry: Thermodynamics (4)

Theoretical and experimental study of the basic physical principles governing the properties and behavior of chemical systems with emphasis on the microscopic aspect. Includes thermodynamics and its applications to phase equilibrium and chemical equilibrium: non-ideal systems, real gases and solutions and electrochemistry. Requires 45 hours of lecture and 45 hours of closed presential lab.

Prerequisite: PHYS 3002, MATH 2252, CHEM 3320.

CHEM 3920 - Physical Chemistry: Quantum and Kinetic (4)

Theoretical and experimental study of basic physical principles governing the properties and behavior of chemical systems with emphasis on the microscopic aspect. Includes quantum mechanics and its application to the atomic and molecular structure, spectroscopy, and chemical kinetics. Requires 45 hours of lecture and 45 hours of closed presential lab.

Prerequisite: PHYS 3002, CHEM 2222, 3320, MATH 2252.

CHEM 3955 - Chemical Synthesis (2)

Synthesis of chemical compounds and their characterization by instrumental methods. Emphasis on the application of spectroscopic methods and multistep synthesis. Requires 60 hours of lab.

Prerequisite: CHEM 3230, 3320.

CHEM 4000 - Instrumental Analysis (4)

Discussion of the fundamentals of chemical and instrumental analysis used in scientific research and industry. Application of quantitative analytical techniques, instrumental analysis and chemical principles. Emphasis on data management and writing technical reports. It requires 45 hours of conference and 45 hours of laboratory.

Prerequisite: CHEM 2222 and CHEM 3320.

CHEM 4003 - Industrial Chemistry (3)

Introduction to the chemical industry and its economic aspects; industrial processes emphasizing the application of chemical principles to the development of commercial products.

Prerequisite: CHEM 2222, 3320.

CHEM 4070 - General Inorganic Chemistry (3)

Structures and reactions of inorganic compounds. Course designed for secondary school teachers.

Prerequisite: CHEM 3320.

CHEM 4170 - Separation Methods (3)

Analysis of the different instrumental separation techniques, including gas chromatography (GC), high performance liquid chromatography (HPLC), capillary electrophoresis (CE) coupled with mass spectrometry (MS). Discussion of specific instrumental aspects, such as sample treatments and separation optimization. It requires 30 hours of conference and 45 hours of closed laboratory.

Prerequisite: CHEM 3320.

CHEM 4180 - Advanced Organic Chemistry (3)

Mechanical, synthetic and stereochemical aspects of carbonations reactions, additions to multiple chains, reductions, oxidations, and pericyclic reactions. Emphasis on the retrosynthesis of compounds with optical activity.

Prerequisite: CHEM 2222, 3230.

CHEM 4200 - Advanced Inorganic Chemistry (3)

Study of the reactions, properties and applications of inorganic and coordination compounds. Analysis of the theories of valence bond, molecular orbitals and crystalline field. Solid state, symmetry and their applications.

Prerequisite: CHEM 2222,3320 and PHYS 3002.

CHEM 4220 - Biochemistry (4)

Chemical reactions occurring in living matter, using modern techniques for the analysis of carbohydrates, lipids, proteins, nucleolar acids hormones and minerals. Requires 45 hours of lecture and 45 hours of closed presential lab.

Prerequisite: CHEM 2222, 3320.

CHEM 4221 - Biochemistry II (3)

Discussion of the fundamentals of metabolic chemistry and molecular biology. Examination of research topics in biochemistry and biotechnological development. Analysis of the molecular processes responsible for the appearance of diseases. Requires 30 hours of conference and 45 hours of laboratory.

Prerequisite: CHEM 4220.

CHEM 4230 - Forensic Chemistry (3)

Discussion of the basics of forensic chemistry. Application of forensic chemistry procedures in criminal investigation. Description of analytical chemical methods, techniques and instrumentation applied to forensic chemistry. Evaluation of criminal cases from the chemical perspective. Requires 30 hours of conference and 45 hours of laboratory.

Prerequisite: CHEM 4220.

CHEM 4240 - Instrumental Analytical Chemistry (5)

Study of the components, foundations and applications of standard used instrumentation for separation, identification and quantitative analyzes of chemical substances. Includes spectroscopic techniques, chromatography and electrochemistry. Emphasis on the methods of optimization, calibration and validation commonly used in instrumental analysis. Discussion of the strengths and limitations of the different analysis methods and techniques. Requires 45 hours of lecture and 75 hours of closed presential lab.

Prerequisite: CHEM 3230, 3320.

CHEM 4300 - Research Methods in Biochemistry (3)

Discussion of laboratory techniques in biochemistry. Application of the fundamentals and techniques of biochemical analysis in scientific research. Data analysis, report writing and presentation of results. Integration of ethical and legal principles that govern scientific research. Requires 30 hours of conference and 45 hours of laboratory.

Prerequisite: CHEM 4221.

CHEM 4320 - Industrial Chemical Analysis (4)

Application of standard methods of sample analysis, emphasizing instrumental procedures (atomic and molecular spectroscopy, coulometric and volumetric titrations) used in industrial chemical analysis. Designed for students in chemical technology. Requires 45 hours of lecture and 45 hours of closed lab.

Prerequisite: CHEM 4170.

CHEM 4350 - Chemistry of Materials (3)

Analysis of the structure, physical properties, synthesis, reactions and the behavior of substances of technological importance, such as alloys, polymers, ceramic, semiconductors and compound materials.

Prerequisite: CHEM 2222 and CHEM 3320.

CHEM 4650 - Chemical Kinetics (3)

Kinetics of homogeneous reactions, theoretical kinetics, methods of determining order, reactions of simple order, compound reactions, complex reactions and reactions in solution. Photochemistry and homogeneous and heterogeneous catalysis. Prerequisites: CHEM 2222, MATH 2251.

Prerequisite: CHEM 2222, MATH 2251.

CHEM 4700 - Agricultural Chemistry (3)

Analysis of the effects, implications and applications of fertilizers, insecticides and herbicides on natural resources and human health. It includes the study of the theoretical foundations of biochemistry for the natural or anthropogenic production of fertilizers, insecticides and herbicides. Discussion of the ethical, legal and economic aspects that arise from the implementation of agricultural and environmental chemistry. Requires 30 hours of lecture and 45 hours of closed laboratory.

Prerequisite: CHEM 2222, 3320 and MATH 1500.

CHEM 4750 - Blue Chemistry (3)

Introduction to the chemistry of the sea. Describe the physical and chemical properties of seawater. Emphasis on the importance of the elements present in seawater and descriptions of nutrients and organic matter in seawater and its relationship. Discussion of the study of marine activities, marine products that are useful for life and the effect of water pollution in living resources.

CHEM 4870 - Process Validation (3)

Discussion of good manufacturing practices (GMP). Analysis of the methodologies and applications related to the activities of calibration, qualification, validation and controlled change management so that a product meets the previously determined specifications. It requires 45 hours of lecture and 45 hours of closed laboratory.

Prerequisite: CHEM 3320 and BIOL 2153.

CHEM 4900 - Chemical Assistance for Improving Crops (4)

Identification of the nutritional Prerequisites and of the different crops from which the maximum productivity is obtained. Analysis of the nutrient layer that includes the organic, inorganic component, the ion exchange; soil structure, the richness of macro and micronutrients for the determination of fertilizer use in the application mode.

Identify possible pests that could decrease crop production. Determination of suitable herbicides or pesticides for a given situation. It requires 45 hours of lecture and 45 hours of closed laboratory.

Prerequisite: CHEM 4700.

CHEM 4910 - Industrial Practice (3)

Practical experience in an industrial chemical laboratory under the supervision of program staff and industrial personnel. Requires 120 hours. Prerequisites: CHEM 3230, 3320.

Prerequisite: CHEM 3230, 3320.

CHEM 4915 - Practice in Industrial Chemistry (3)

One hundred forty hours of practical work in an industrial chemistry scenario or the development of a research project under the supervision of a full-time faculty member of the program.

Prerequisite: Authorization from the department's chair.

CHEM 4965 - Senior Seminar (3)

Integration of the knowledge and skills acquired in the major courses. Iintegration of bibliographical search strategies. Effective use of the information and chemical literature in case analysis and the research of current subjects of interest. Requires the presentation of oral and written works.

Prerequisite: CHEM 3910 or 3920 and 4240.

CHEM 4970 - Industrial Chemistry Seminar (1)

Integration of the knowledge acquired by means of the oral and written presentation of a topic in the industrial chemistry field.

Prerequisite: CHEM 4170.

CJUS - Criminal Justice

CJUS 1000 - Introduction to Criminology (3)

Discussion of the principles and foundation of the etiology of crime and the criminological theories from a biopsychosocial context. Includes intervention and prevention strategies.

CJUS 1010 - Police and Community (3)

Study of the social problems in the communities, the strategies of prevention, intervention and integration of the law enforcement agents in the communitarian context.

Emphasis on the relation of police and the community.

CJUS 2010 - Criminal Procedures in Justice Systems (3)

Study of the general principles of the right to a process of criminal justice from the point of view of intervention of the law enforcement officer in our criminal justice systems. Analysis of the applicable legislation.

CJUS 2050 - Victims of Crime (3)

Discussion on the victims of crime and their rights from a social, political and legal approach. Analysis of programs, services, support groups and their implications for the victims and their families.

CJUS 2070 - Human and Civil Rights (3)

Discussion of the principles and contemporary foundations of human and civil rights and its impact on the administration of justice.

CJUS 2075 - Social Deviation (3)

Discussion of the theoretical and conceptual foundations of social deviation. Emphasis on the identification of the biopsycososial factors that influence altered conduct and social reaction.

CJUS 2080 - Criminal Law, Science, And Environment (3)

Study of the relationship between criminal law and the environmental protection system of Puerto Rico and the United States. Analysis of the criminal provisions of environmental laws. Discussion of evidence Prerequisites related to cases of environmental crimes. Analysis of community organizations and the scientific community in the application of penal environmental norms.

CJUS 2090 - Juvenile Justice System (3)

Discussion of the origin, philosophy and development of the Juvenile Justice System and its substantive and procedural aspects. Emphasis on the system response to juvenile delinquency, its course, development and analysis.

CJUS 2095 - Ethics in Processes of Prevention and Police Intervention (3)

Study of the ethical principles that govern the strategies of prevention and police intervention. Discussion of the applicable legislation and jurisprudence.

CJUS 2205 - Oral and Written Communication for Forensic Investigation (3)

Writing of documents to be used as part of the expert work

of investigation. Includes oral and written communication techniques for the presentation and writing of forensic information.

CJUS 2260 - Foundations of Criminal Investigation (3)

Knowledge of the essential elements of criminal investigation. Discussion of the norms regarding evidence and the judicial procedure. Presentation of the ethical problems of investigation.

CJUS 3015 - Women Faced with Crime (3)

Analysis of the contemporary vision of women facing crime and the criminal justice system. Emphasis on the theories regarding women in relation to crime and the criminal process.

CJUS 3025 - Criminal Law (3)

Application of the basic principles of Criminal Law and interpretation rules. Crimes with greatest social impact and applicable legislation.

CJUS 3027 - White Collar Crime (3)

Analysis of the sociological and legal aspects of white-collar crime and its corporate and individual manifestations. Emphasis on the social, economic and ethical cost of this behavior. Discussion of cases and applicable jurisprudence.

CJUS 3030 - Interviews and Interrogations (3)

Study of interviewing and interrogation techniques as sources of primary information in criminal investigation. Emphasis on these techniques and report preparation and procedures for presentation. Simulated practical experiences.

CJUS 3035 - Special Criminal Laws (3)

Analysis of criteria for interpretation, application and discussion of Special Criminal Laws in Criminal Justice. Study of applicable legislation. Prerequisite: CJUS 3025 and SOCI 2080.

CJUS 3040 - Penology (3)

Analysis of modern penology and its social repercussion. Includes the evolution of sanctions, correctional models, therapeutic strategies and institutional treatment in the criminal justice system.

CJUS 3045 - Rights of The Correctional Population (3)

Analysis of disciplinary, civil and criminal actions and security measures. Includes legislative, administrative and judicial decisions applicable to the rights of the correctional population.

CJUS 3055 - Federal Jurisdiction (3)

Study of the federal system, the relationship with the states, territories and the central government. Analysis of the functions and duties of the agencies that compose the federal criminal justice system. Emphasis on the substantive and procedural aspects of federal criminal legislation.

CJUS 3060 - Correctional Administration (3)

Application of basic principles of management and operation of correctional institutions. Emphasis on administration of services, security measures, supervision and discipline of the correctional population and institutional groups.

CJUS 3080 - Community Based Rehabilitation (3)

Identification of nonprofit institutions that offer rehabilitation services leading to reeducation and reintegration of the transgressor outside an institutional environment. Analysis of the differences and effectiveness of alternate programs of rehabilitation and prevention of recidivism.

CJUS 3085 - Criminal Law and Immigration (3)

Study of the history and operation of the United States immigration system and the relationship between state and federal jurisdiction in the field. Discussion of convergence issues between criminal law and immigration law. Analysis of legal dispositions applicable in removal processes at immigration administrative courts and the criminal norms that are used in these processes.

CJUS 3241 - Forensic Investigation I (3)

FORENSIC investigation I

CJUS 3242 - Forensic Investigation II (3)

Analysis of technology within the field of forensic investigation. Application of computerized programs of forensic, investigation such as: the identification of the suspect, the reconstruction of the scene, dactylographic and ballistic applications. Prerequisite: CJUS 3241.

CJUS 3250 - Criminal Investigation (3)

Analysis of general concepts of modern techniques for investigating crimes. Application of the scientific method and auxiliary sciences to the study of cases in criminal investigation. Simulated practical experiences.

CJUS 3260 - Money Laundering (3)

Analysis of the socioeconomic and legal aspects related to money laundering and transnational organized crime. Identification of the agencies and organizations involved in the prevention and investigation of money laundering. Study of the applicable legal and regulatory framework.

CJUS 3300 - Alternate Methods in The Resolution of Conflicts (3)

Analysis of alternate methods in the resolution of conflicts. Study of the negotiation techniques necessary to solve legal problems.

CJUS 397_ - Special Topics (3)

Special Topics related to the major.

CJUS 4014 - Analysis of Data for Forensic Investigation (3)

Analysis of the statistical support techniques for forensic investigation. Includes the use of the computer lab to look for information, to introduce, analyze and interpret statistical data of interest to the discipline. Prerequisite: PSYC 3001.

CJUS 4020 - Alcoholism and Drug Addiction (3)

Analysis of the physiological, psychological and sociological factors that motivate the use and abuse of alcohol and controlled substances; legal aspects. Emphasis on health approches,mitigation and medication, decriminalization and legalization of drugs.

CJUS 4035 - Modern Technology in Criminal Investigation (3)

Application of modern technology in the field of the criminal investigation with emphasis on forensic science. Exposure to simulated practical experiences where the integration of theoretical tools, the techniques and the methods in criminal research are produced.

Prerequisite: CJUS 3250.

CJUS 4040 - Evidence Management (3)

Analysis and management of Rules of Evidence and Criminal Procedure applicable to investigation. Study of cases and applicable jurisprudence.

Prerequisite: CJUS 3250.

CJUS 4060 - Fraud Detection and Management (3)

Analysis of the concept of fraud and its different manifestations in public and private institutions.

Application of the investigation methods in cases of fraud. Discussion of alternatives for prevention and applicable legislation.

Prerequisite: CJUS 3025, 3250.

CJUS 4500 - Social-Scientific Research Methodology (4)

Study of the nature, scope, methods, and designs of research and the steps to follow in social-scientific research and its application to the discipline. Analysis of research projects performed in the field of social sciences for the identification of the different research components, such as the topic, the problem, the method and the design used, the instruments and the techniques for data collection, data analysis, and interpretation of the results. Includes the discussion of a responsible conduct in research.

Prerequisite: PSYC 3001.

CJUS 4914 - Practice in Criminal Investigation (3)

Integration of knowledge, skills and attitudes in the work scenario in the area of criminal investigation, supervised by a professor. This Practice will take place in Puerto Rico. A minimum of 135 hours of practical experience are required.

Prerequisite: A minimum of 90 approved credits including 12 credits in the major and all Prerequisites established in the Internship Handbook.

CJUS 4915 - Practice in Forensic Investigation (3)

Integration of knowledge, skills and attitudes in a work scenario in the area of forensic investigation, supervised by a professor. This Practice will be taken in Puerto Rico. Requires a minimum of 135 hours of practical experience.

Prerequisite: A minimum of 90 approved credits, including 12 credits of the major, and compliance with all Prerequisites established in the Practice Manual. .

CJUS 4972 - Seminar in Criminal Justice (3)

Integration of the knowledge, skills and attitudes required in the area of criminal justice. Analysis of current affairs with emphasis on the transition from student to professional. Requirements: Have approved ninety (90) credits including twelve (12) major credits. Academic advisor approval is required.

Prerequisite: A minimum of 90 approved credits, including twelve (12) major credits. The authorization of the Academic advisor is required.

COED - Cooperative Education

COED 2000 - Seminar Cooperative Education (1)

Different techniques for obtaining and keeping employment. Orientation on the different types of organizations in the world of the labor market and the nature of different professions. Analysis of activities to be performed in the workplace. Interpersonal relations, personal appearance and qualities.

COED 3001 - Cooperative Education I (3)

Work experience that integrates theory with practice. The student will work in a real work scenario with a minimum of 12 hours per week until completing 145 hours. It includes training and supervision in the activities carried out.

Prerequisite: Authorization from the department's chair and the organization that will employ the student in the COED modality.

COED 3002 - Cooperative Education II (3)

Work experience that integrates theory with practice. The student will work in a real work scenario with a minimum of 12 hours per week until completing 145 hours. It includes training and supervision in the activities you carry out.

Prerequisite: COED 3001 and authorization from the department's chair and the organization that will employ the student in the COED modality.

COED 4001 - Cooperative Education III (3)

Work experience that integrates theory and practice. The student will work in a real work scenario with a minimum of 12 hours per week until completing 145 hours.

Prerequisite: Prerequisite: COED 3002 and authorization from the department's chair and the organization that will employ the student in the COED modality.

COED 4002 - Cooperative Education IV (3)

Work experience that integrates theory with practice. The student will work in a real work scenario with a minimum of 12 hours per week until completing 145 hours.

Prerequisite: COED 4001 and authorization from the department's chair and the organization that will employ the student in the COED modality.

COEN - Computer Engineering

COEN 2210 - Introduction to Programming (4)

Introduction to problem solving using the computer programming. Development of students' programming abilities and improvement of their efficiency in the application of computer concepts to their field of study. Emphasis on data types, functions, control structure, and basic data structures. Requires 45 hours of lecture and 30 hours of closed lab.

Prerequisite: MATH 1500.

COEN 2220 - Advanced Programming (4)

Application of advanced programming techniques in solving engineering problem. Emphasis on the use of sub-programming, object-oriented programming and data structures for data collection, distribution, storage and sorting. Requires 45 hours of lecture and 30 of closed lab.

Prerequisite: COEN 2210.

COEN 2310 - Discrete Mathematics for Computer Engineering (3)

Study of forms and logical equivalences, circuits and their simplification, Boolean algebra, numerical systems, combinations, and substitutions. Emphasis on propositional logic. Includes the deductive process and rules of inference. Functions, Graph Theory and trees, difference equations of, vectors and linear transformations. Requires additional time in an open lab.

Prerequisite: COEN 2220.

COEN 397_ - Special Topics (3 to 4)

Discussion of current special topics in the field of Computer Engineering not included in core courses or program major courses.

Prerequisite: Authorization of the department's chair.

COEN 3410 - Software Design and Construction (3)

Application of the software development cycle: analysis, design, testing, documentation and maintenance. Use of effective practices for software construction with emphasis on planning, the elimination of errors, design focused on the user, the design focused on interaction with hardware and quality assurance. Requires additional time in an open lab.

Prerequisite: COEN 2220.

COEN 3510 - Operating Systems (4)

Design and implementation of fundamental concepts of operating systems with emphasis on hardware. Management of processor, memory, resources and file system. Analysis of installation, administration and security concepts in operating systems. Requires 45 hours of lecture and 30 hours of closed lab.

Prerequisite: COEN 222.

COEN 4420 - Computerized Information Systems Design (4)

Analysis and design of information systems. Design of databases. Emphasis on logical models of data and on relational database management systems. Requires 45 hours of lecture and 30 hours of closed lab.

Prerequisite: COEN 3410.

COEN 4422 - Design of User Interface and Prototypes (3)

Design, implementation and evaluation of graphical interfaces. Techniques and methods focused on the Human-Computer Interaction and Usability Engineering. Development of skills and strategies for the design of systems focused on the user. Study of the users' experience levels and interaction styles. Knowledge and development of different types of prototypes using the techniques learned. Requires 45 hours of lecture-lab.

Prerequisite: COEN 3410.

COEN 4423 - Design of Expert Systems (3)

Expert system application with emphasis on the field of engineering. Acquisition and representation of knowledge, inference motor, reasoning strategies, hybrid expert systems. Requires 45 hours of lecture-lab. Prerequisites: COEN 3410, 4510.

Prerequisite: COEN 3410, 4510.

COEN 4450 - Data Science (4)

Study of statistical, computational and software engineering concepts used to obtain knowledge from a data set. Emphasis on data manipulation procedures typical of data science: data extraction, data purification, data processing through statistical methods, test design and data visualization. Application of the skills learned for data manipulation using tools available for data science. It requires 45 hours of conference and 30 hours of closed laboratory.

Prerequisite: COEN 2220, ENGR 3200.

COEN 4452 - Cyber Security (4)

Study of the fundamental principles of security in computers and networks. Emphasis on the prevention of cyber attacks and on the analysis of the manifestations and impacts that these interruptions cause. Integrated application of security principles and concepts. It requires 45 hours of lecture and 30 hours of closed laboratory.

Prerequisite: COEN 2220.

COEN 4510 - Computer Architecture (4)

Analysis of computer organization and architecture. Emphasis on the set of instructions, addressing modes, memory, interruptions, registries and structure of the processing unit. Development of programs in assembly language. Requires 45 hours of lecture and 30 hours of closed lab.

Prerequisite: ELEN 3320 and COEN 2210 or ENGR 2130.

COEN 4535 - Integrated Computer Systems (4)

Integrated systems analysis and design. Emphasis on architecture and systems programming based on communication and interface between different hardware and computers devices. Requires 45 hours of lecture and 30 hours of closed lab.

Prerequisite: ELEN 4010, 4410.

COEN 4550 - Parallel Computation Design (3)

Design of computer programming in parallel and distributed. Emphasis on multiprocessing, parallel programming. Includes interconnection, communication and systems synchronization. Paradigms and models in parallel. Requires 45 hours of lecture-lab.

Prerequisite: COEN 4510.

COEN 4560 - Design and Construction of Compilers (3)

Analysis and application of the design and construction of compilers: lexicon, robot, parsing techniques, grammar free of context, tables of symbols, syntax directed translations and other related topics. Requires 45 hours of lecture-lab.

Prerequisite: COEN 3510.

COEN 4915 - Practicum in Computer Engineering (3)

Practical experience in computer engineering with private industry or the government, supervised by a coordinator.

Preparation of a comprehensive report based on real job experience in the field of computer engineering under the supervision of a faculty member. Requires a minimum of 160 work hours.

Prerequisite: Authorization of the department's chair.

COEN 4921 - Undergraduate Research in Computer Engineering I (3)

Development of a research project in the area of computer engineering under the supervision of a faculty member. The student will dedicate a minimum of 135 hours of work in the development of this project.

Prerequisite: Authorization of the department's chair.

COEN 4922 - Undergraduate Research in Computer Engineering Ii (3)

Development or continuation of a research project in the area of computer engineering under the supervision of a faculty member. The student will dedicate a minimum of 135 hours of work in the development of this project.

Prerequisite: COEN 4921 and authorization of department's chair.

COMF - Computer Forensics

COMF 1110 - Introduction to Computer Forensics (3)

Knowledge of the specific procedures for maintaining and preserving all evidence at the scene of a cybercrime involving the preservation of volatile memory tests, detection of interventions in the system under analysis and application of solutions to possible situations in which it could destroy the evidence. It includes first response procedures and techniques to maintain system integrity, contain intrusion, protection of existing tests, and instructions for creating reports.

COMF 1220 - Operating Systems Security (3)

Discussion of the functioning of operating systems applied to computer forensics techniques for the recovery and analysis of digital evidence within a legal framework. Recognition of forensic examination techniques of operating systems that are used to illustrate typical processes of evidence investigation. Requires 30 hours of conference and 45 hours of laboratory.

Prerequisite: COMF1110, CSIR1120.

COMF 2110 - Digital Data (3)

Application of forensic informatic techniques for the collection of digital evidence and documentation of the procedures used during the investigation, the analysis of digital evidence, its preservation, and the presentation of evidence for use in future legal proceedings. Requires 30 hours of conference and 45 hours of laboratory.

Prerequisite: COMF 1220.

COMF 2120 - Cyber Crime and Tools for Computer Forensics (3)

Analysis of cybercrime activities, security threats and legal considerations that cybersecurity professionals encounters in the face of discovery, investigation and prosecution of cybercrime.It includes the study of the tools used by forensic informatic professionals to investigate such incidents. Requires 30 hours of conference and 45 hours of laboratory.

Prerequisite: COMF1220.

COMF 2220 - Systems Design and Architecture (3)

Introduction to the design and general architecture of information systems. Discussion of the OSI and TCP / IP model to ensure knowledge of the operation and behavior of information systems and their performance within a network. Identify the different information systems such as computers, routers, network switches, servers, among others. Requires 30 hours of conference and 45 hours of laboratory.

Prerequisite: COMF 2110, 2120.

COMF 2230 - Mobile Device Forensics (3)

Analysis of mobile devices to identify, preserve, investigate, and examine stored data. Preparation of reports of the investigated findings. Application of research skills in mobile devices in accordance with the corresponding jurisprudence. It includes digital telephone networks and technologies related to mobile devices. Discussion of the concepts of data extraction and analysis in integrated circuits.

Prerequisite: COMF 2110, 2120.

COMF 2231 - Criminal Investigation (3)

Analysis of the fundamentals and procedures used in criminal investigation. Emphasis on the investigation of specific crimes, the identification of sources of information and the procedures necessary for the proper handling of evidence in forensic informatics. Development of the investigation steps beginning with the initial security of the crime scene and ending with the presentation of evidence and adequate testimony in court.

Prerequisite: CJUS 1000.

COMP - Computer Science

COMP 1010 - Internet and its Technologies (3)

History of Internet. Terminology used in Internet. Components for telecommunication between computers. Characteristics and operations of browsers. Use of search engines. Management of files through Internet. Use of e-mail. Design of simple web pages using applications. Connections to Internet through applications such as word processors, electronic spreadsheets, or presentation applications. Closed laboratory.

COMP 2015 - Web Page Design (3)

Discussion of concepts and strategies for the analysis and design of sites and pages used through Internet. Analysis, design, and programming of interactive pages using code generators for HTML, DHTML and JavaScript. Includes design and adaptation of graphical elements and multimedia for interactive pages. Emphasis on design principles and integration of visual elements that use vectorial animation. Closed laboratory. Requires additional time in an open laboratory.

Prerequisite: COMP 1010.

COMP 2025 - Development of Webpages (3)

Discussion of the concepts of designing and developing WebPages. Application of the HTML and Javascript languages together with CSS for the creation of WebPages. Creation and adaptation of multimedia elements to be used in interactive pages. Requires 45 hours of lecture-lab.

COMP 2110 - Introduction to Computer Science (3)

Analysis of numerical systems and representation of data, formulation and evaluation of logical functions, arithmetical and logical expressions. Includes an introduction to circuit logic and the basic areas of computer sciences, such as: programming languages, operating systems and data bases. Requires additional time in an open laboratory.

Corequisite: GEIC 1010, if it has not been approved previously.

COMP 2120 - Programming Logic (3)

Formulation of arithmetical and logical expressions. Representation of algorithms by means of the use of flow charts and pseudo codes. Application of the basic search and ordering structures of data and algorithms. Requires 30 hours of lecture and 30 hours of closed lab.

COMP 2300 - Visual Programming (3)

Analysis, design and implementation of programs through the use of a visual programming language. Includes the administration of objects, their properties, events and methods. Emphasis on the definition of variables, types of data, registers and other programming structures, subprograms, iteration structures, decision, and selection. Closed laboratory. Requires additional time in an open laboratory.

Prerequisite: COMP 2110, 212.

COMP 2315 - Structured Programming (3)

Application of programming fundamentals, data types, declarations of variables and control structures, such as sequence, selection and iteration, by means of a structured programming language. Development of modular programs that use data structures, archives, pointers and data transfer through functions with parameters. Requires 30 hours of lecture and 30 hours of closed lab.

Prerequisite: COMP 2120.

COMP 2320 - Introduction to Java Programming (3)

Introduction to the basic concepts of Java language: types of data and flow control. Fundamental structures of programming, classes, objects, and methods. Graphic interfaces, Applets and HTLM. Closed laboratory.

Prerequisite: COMP 2315.

COMP 2325 - Ada Programming (3)

Introduction to the development of system programs. Concepts such as data abstraction, multitasking, exception handling and encapsulation. Lexical style of ADA language. Scalar and numbered types, control structures and compound types in ADA. Subprograms such as functions and procedures, packages, and library units, and data transfer between them. Private types. Management of exceptions. Principles of tasking such as parallelism, rendezvous, timing and scheduling. Requires additional time in an open laboratory.

Prerequisite: COMP 2315.

COMP 2350 - Aviation Programming in C Language (3)

Analysis and design of algorithms, data types and structures. Programming in C Language and its application to aviation for problem solving. Lexical and syntactic level, functions, control flow and fork operations. Arrays, strings, pointers, electronic problems,

management, flight planning and meteorology. Basic concepts of the UNIX operational system, a platform for maintaining, modifying or developing programs in C. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: COMP 2120.

COMP 2400 - Object Oriented Programming (3)

Analysis of the object-oriented methodology. Application of the projects of the object-oriented programming, such as abstraction, encapsulation, polymorphism and inheritance. Requires 45 hours of lecture-lab.

Prerequisite: COMP 2315.

COMP 2501 - Discrete Computational Structures I (3)

Application of propositional logic, inference rules, theory and algebra of sets in solving problems addressed to computer science. Verification of statements through mathematical induction. Application of the theory of graphs and trees in the representation of models. Introduction to matrix theory. It requires 45 hours of conference-laboratory.

Prerequisite: MATH 1500 or MAEC 2140.

COMP 2502 - Discrete Computational Structures II (3)

Application of the theory of matrices in linear transformations. Application of count techniques and combinatory analysis in the principles of discrete probability. Application of boolean algebra and Karnaugh maps in the simplification of boolean functions and combinatory circuits. Analysis of relations and functions. Requires 45 hours of lecture-lab.

Prerequisite: COMP 2501.

COMP 2600 - Business Programming (3)

Introduction to the data-processing environment. Basic file organization. Master and transaction files. Operations with file creation, update, restoration, merge and back-up copies. Design and generation of reports through a commercially oriented programming language. Requires additional time in an open lab.

Prerequisite: COMP 2300, 2315.

COMP 2800 - Databases (3)

Discussion of the components and operation of a basic database system. Description of the different data models for the design and implementation of a database by means of the use of the Organization-Relation model. Application of SQL. Requires 45 hours of lecture-lab.

COMP 2850 - Movable Computation (3)

Discussion of tools and platforms for the design of movable applications. Design of programs considering their ease of utilization. Creation of applications by means of the use of a development platform for movable devices. Requires 45 hours of lecture-lab.

Prerequisite: COMP 2315.

COMP 2900 - Data Structures (3)

Analysis of problem solving with abstract data types. Application of structures of linear and nonlinear data and techniques for the administration of data, such as: recursive processes and search and ordering algorithms. Analysis of algorithm efficiency. Requires 45 hours of lecture-lab.

Prerequisite: COMP 2400, 250.

COMP 2970 - Seminar and Practice (3)

Research on ethical topics in the Computer Science area. Supervised professional practice in companies, organizations, agencies or other enterprises compatible with the computational areas where skills and knowledge are applied. Requires 30 hours of seminar and the completion of a minimum of 60 hours of practice.

Prerequisite: COMP 2400 y 2800.

COMP 397_ - Special Topics (1 to 6)

Analysis of current topics relevant to the computer science area.

Prerequisite: Authorization from the department's chair.

COMP 3015 - Web Programming with Databases (3)

Integration of databases and dynamic pages in the development of programs for the WEB. Programming of forms for data capture, validation and presentation. Requires 45 hours of lecture-lab.

Prerequisite: COMP 2800.

COMP 3200 - Computer Organization and Assembler Language (3)

Digital systems. Organization and structure of main components in computer systems. Representation and manipulation of numerical and non-numerical data at machine level. Comparison between different instruction sets and corresponding directional modes. Fetching and operations execution, depending on architecture. Interruption concepts. Access-and memory management techniques, registers and peripherals. Requires additional

time in an open lab.

Prerequisite: COMP 2900.

COMP 3300 - Organization and Computer Architecture (3)

Analysis of the structure and architecture of processors and multiprocessors with emphasis on the characteristics, benefits and interaction of the functional components. Discussion of the foundations and strategies of access and administration of data. Analysis of memory hierarchies and architectures. Application of digital logic for the representation of data. Requires 45 hours of lecture-lab.

Prerequisite: COMP 2900.

COMP 3320 - The Computer in Teaching (3)

Computer languages developed to teach computer skills to children (LOGO, PILOT and others). Turtle graphics. Set of instructions, programming and comparative language model to develop instructional modules. Evaluation of selected educational programs and discussion of the applied psychological principles and other attributes that have made such programs attractive and adequate for teaching. Requires additional time in an open lab.

COMP 3400 - Software Engineering (3)

Analysis of the stages of development of software with emphasis on the management of projects and the engineering of Prerequisites. Comparison of development models and application of the Object-oriented model with UML. Requires 45 hours of lecture-lab.

Prerequisite: COMP 2800, 2900.

COMP 3500 - Operating Systems (3)

Analysis of the concepts and functions of operating systems. Description of resource management, such as processes, memory and file systems. Discussion of the administration of real and virtual memory. Analysis of concurrence, security and protection. Requires 45 hours of lecture-lab.

Prerequisite: COMP 3300.

COMP 3600 - Computer Graphics (3)

Discussion of the principles and basic techniques for the generation of computer graphics. Programming for the generation of lines, primitive geometric curves using the API in a programming language. Analysis of visualization techniques: windows, cuts and views. Application of linear transformations in two and three dimensions: transfer,

rotation, changes of scale, reflection and deformation. Application of interaction techniques. Requires 45 hours of lecture-lab.

Prerequisite: COMP 2502, 2900.

COMP 3800 - Programming Languages (3)

Analysis of the design and implementation of programming languages as a algorithm representation tool. Comparison of different paradigms of programming languages that includes imperative, functional, logical, object-oriented and dynamic paradigms. Description of the formal aspects of the syntax and semantics of the language. Requires 45 hours of lecture-lab.

Prerequisite: COMP 2900.

COMP 3900 - Visual Computation (3)

Application of human-computer interaction concepts. Development of applications with graphical interfaces and interaction with databases. Design and production of reports. Requires 45 hours of lecture-lab.

Prerequisite: COMP 3015.

COMP 4160 - Parallel Processing (3)

Analysis of architectures of parallel processors and multiprocessors. Development of control algorithms for parallel and concurrent processes. Evaluation of the execution yield of parallel programs. Requires 45 hours of lecture-laboratory.

Prerequisite: COMP 3500.

COMP 4200 - Teleprocessing and Networks (3)

Analysis of computer network architectures and communication protocols. Design of networks considering the principles of security in data communication. Comparison of communication and distributed processing protocols. Requires 45 hours of lecture-lab.

Prerequisite: COMP 2502, 3300.

COMP 4210 - Computing in The Cloud (3)

Analysis of the concepts and technologies that facilitate the creation of a global market for Cloud Computing services. Comparison of infrastructure technologies, architecture models, platforms, services, security, allocation of resources and development of Private Cloud. It requires 45 hours of conference-laboratory.

Prerequisite: COMP 3300 or ADEV 2500.

COMP 4220 - Advanced Teleprocessing and Networks (3)

Analysis of the modulation techniques in data transmission. Classification of networks and communication protocols. Analysis of the behavior aspects of a system, including confidentiality, data integrity, availability, and access control. Requires 45 hours of lecture-lab.

Prerequisite: COMP 4200.

COMP 4230 - Installation and Configuration of Physical Components for Networks (3)

Analysis of the installation and configuration of equipment connected to a communications network, as well as the evaluation and preparation of transmission means. Requires 45 hours of lecture-lab.

Prerequisite: COMP 4220.

COMP 4235 - Operating Systems for Networks (3)

Analysis of the concepts and functions of the operating systems for information networks. Includes access to resources, services and protocols. Demonstration of installation, configuration and maintenance of operating systems for networks. Requires 45 hours of lecture-lab.

Prerequisite: COMP 3500, 4200.

COMP 4240 - Network Management (3)

Discussion of the basic functions of planning, organization, control and maintenance of a computer network. Analysis of the structures and procedures for the evaluation and selection of programs and equipment for the installation and configuration of a network. Development of techniques for the detection of problems, data transmission control and security. Requires 45 hours of lecture-lab.

Prerequisite: COMP 4230.

COMP 4270 - Automata Theory (3)

Analysis of automata concepts, finite automata and finite memory, transition tables, Meally and Moore models, strongly connected machines, reduced diagrams, component of state diagrams and infinite automata. Application of calculable functions by means of Turing. Discussion of the operation of programmable machines, programs, universal machines for a programmable computer and the Post System for the administration of symbols.

Prerequisite: COMP 2502.

COMP 4400 - Design and Implementation of Systems (3)

Integration of the principles of analysis and design in the development and implementation of a system. Application of verification and validation techniques. Preparation of documents and user manuals. Planning the maintenance and optimization of a system. It requires 45 hours of conference-laboratory.

Prerequisite: COMP 3400.

COMP 4410 - Computational Security (3)

Analysis of the foundations for the detection of risks and threats against information systems. Evaluation of the vulnerability of computer systems. Application of controls and methods of protection in the safe and reliable operation of an information system. It requires 45 hours of conference-laboratory.

Prerequisite: COMP 3300 or ADEV 2500.

COMP 4415 - Forensic Computation (3)

Analysis of the fundamental concepts used in a computer science forensic investigation. Application of methods and techniques necessary for the extraction of data from digital devices that can be used in investigations of a legal nature. Requires 45 hours of lecture-lab.

Prerequisite: COMP 3300.

COMP 4420 - Systems Design and Analysis (3)

Description of systems and systems analysis environment. Basic tools for design and analysis, and applications to the systems life cycle and development. Project-management principles and methods.

Prerequisite: COMP 3400.

COMP 4480 - Artificial Intelligence (3)

Discussion of the fundamentals, concepts and applications of artificial intelligence. Analysis of the intelligent agents' paradigm, knowledge representation, machine learning and search and reasoning strategies. Programming in a functional language as a means for the application of the fundamentals and techniques in problem solving. Requires 45 hours of lecture-lab.

Prerequisite: COMP 2900.

COMP 4580 - Introduction to Robotics (3)

Classification of robotic technology and its applications. Description of the components of a robot, including

manipulators, actuators, extreme effectors, controllers, sensors and systems of artificial vision. Application of linear transformations in the development of kinematic and dynamic models in robotics. Planning of tasks in programming languages for robotics. Requires 45 hours of lecture-lab.

Prerequisite: COMP 2900, PHYS 3001.

COMP 4910 - Practice and Professional Ethics (3)

Performance of tasks by means of the application of the knowledge and skills included in the Program in an actual work environment and in an institution approved by the practice coordinator. Integration of topics related to the ethics of the profession. Requires a minimum of one hundred thirty-five (135) hours of practice.

Prerequisite: COMP 4200, 4400.

COMU - Communications

COMU 1000 - Introduction to Communications (3)

Discussion of the current theorical models of interpersonal and group communication. Description of the processes of perception and basic persuasion. Development of effective communication strategies.

COMU 1005 - Introduction to Educational Technology (3)

Introduction to the concepts and fundamentals of Educational Technology. Application and integration of the concepts and tools used in the production of educational content. Requires 30 hours of lecture and 30 hours of lab.

COMU 1010 - Fundamentals of Graphic Communication (3)

Theories and practices in graphic design for effective communication, introduction to the different visual communication media with emphasis on their adequate use and on related terminology. Requires 30 hours of lecture and 30 hours of lab.

COMU 1020 - Introduction to Communication Media (3)

Study and analysis of the history and development of mass media. Emphasis on the processes of communication, the evolution of the media with the arrival of new technologies and their impact on society.

COMU 1025 - Introduction to Graphic Production (3)

Study and application of the concepts and the basic techniques that govern the industry of graphical design. Emphasis in the elements and the foundations for the development of an effective visual communication. Introduction to one of the most used programs for the creation of vectorized graphs. Requires 30 hours of lecture and 30 hours of closed lab.

COMU 1031 - Photographic Techniques (3)

Study of the theory and development of the basic skills of visual communication in digital photography. Emphasis on the use and handling of the camera and in the techniques of image composition. Requires 30 hours of lecture and 30 hours of closed presential lab. Requires the approval of the Director of the Department.

Prerequisite: Authorization from the department's chair.

COMU 1032 - Photography Business (3)

Study of the theory and practice of the tasks inherent to the photography industry with emphasis on the development of the concept of image creation, photographic study, the work tools and the sale and distribution of photos. Requires 30 hours of lecture and 30 hours of closed lab. Prerequisite: COMU 1031.

Prerequisite: COMU 1031.

COMU 1035 - Creative Writing for Media (3)

Study and application of the foundations and techniques used in the writing of the different formats of librettos for sound production and video. Emphasis in the study of the terminology, formats and development of creative skills. Requires 30 hours of lecture and 30 hours of closed lab.

COMU 1045 - Editorial Graphic Production (3)

Study and application of the concepts and techniques that govern the production and the distribution of the publishing design. Emphasis in the design and the composition of printed and digital content, as well as the creation of graphs directed to the visualization of data. Introduction of a software specialized in the creation of publications. Requires 30 hours of lecture and 30 hours of closed lab.

Prerequisite: COMU 1025.

COMU 1051 - Sound Production Techniques (3)

Study of the nature of sound and its behavior. Analysis of how the sound is produced, travels and becomes different

forms from energy. Theory and practice in the techniques associated with locution and in the basic concepts and tools that are used in sound production. Requires 30 hours of lecture and 30 hours of closed lab.

COMU 1060 - Administration of Educational Technology Centers (3)

Study of the administration theories that govern the management for Educational Technology Centers. Discussion and analysis of the processes used in the systematization of services and the production of instructional materials. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: COMU 1005.

COMU 1070 - Voice and Diction (3)

Theory and practice of news casting techniques Emphasis on news commenting, commercials and radio and television documentaries in order to develop better voice control and projection. Requires 30 hours of lecture and 30 hours of closed lab.

COMU 1075 - Fundamentals of Music (3)

Study and introduction to music theory. Interpretation and analysis of musical symbols and their parameters. Application of the basic concepts in a musical arrangement based on rhythm with 4/4 metric. It requires 30 hours of lecture and 30 hours of closed laboratory.

COMU 1080 - Introduction to Multichannel Recordings (3)

Study of the concepts and tools that are used in the production of sound in recording studios. Emphasis on the study of the flow of the sound signal, the recording session, the assembly and the handling of microphones and production consoles. Introduction to Pro Tools or a similar application. It requires 30 hours of lecture and 30 hours of closed laboratory.

COMU 2000 - Fundamentals of Journalism (3)

The history, theory and practice of journalism; the responsibility of the journalist to society, the ethics of journalism.

COMU 2001 - Corporate Communication (3)

Study of the bases of corporate communication, both in an internal or external context. Includes the analysis of the strategies and tools for a competitive communication.

COMU 2002 - Administration of Corporate Communication (3)

Application of the principles and techniques of organizational communication. Study of cases and subjects related to communication in corporate scenes.

Prerequisite: COMU 2001.

COMU 2003 - Trends in Communication Technology (3)

Analysis of the new modalities and techniques in the transmission of information in corporate communication. Identification of the technological means used by the company to facilitate internal and external communication.

COMU 2010 - Writing for Mass Media (3)

Study of the foundations, techniques, skills, styles and the formats of writing for mass media. Includes the writing of press releases, news articles, librettos, announcements and contents in multimodal platforms. Requires activities in an open lab.

COMU 2020 - Communication and Society (3)

Analysis of the historical and sociological perspective on the processes of massive communication, public opinion and advertising. Study of the function of massive means of communication in society. Evaluation of mass media contents in the formation of the individual.

COMU 2030 - Foundations of Public Relations (3)

Study of the history, theory and practice of public relations. Analysis of its evolution and impact in society, mass media and marketing.

COMU 2031 - Foundations of Advertising (3)

Decription of the theoretical and practical foundations of publicity. Analysis of its development, impact and relevance in social communication. Reflection on ethical and legal elements in publicity.

Prerequisite: MKTG 1210.

COMU 2040 - Introduction to The Analysis of Journalistic Texts (3)

Analysis of the use and function of language in journalistic texts; basic techniques in the analysis of text with an emphasis on the development of one's own style.

Prerequisite: COMU 2000.

COMU 2123 - Journalistic Writing for The Media (3)

Study and application of the journalistic genre with emphasis in the coverage and writing of the news and report articles for the media. Exploration of the different methods to obtain data, as well as the formats for informative writing. Requires 30 hours of lecture and 30 hours of closed lab.

Prerequisite: COMU 1035.

COMU 2130 - Planning for Media (3)

Theory and practice of the processes related to media production. Study and analysis of the production stages: pre-production, production and post-production. Emphasis on the design of proposals to produce concepts. Prerequisites: COMU 1020, 1035.

Prerequisite: COMU 1020, 1035.

COMU 2197 - Creative Project (3)

Application of the creative process to resolve communication needs. Preparation of a project to begin in the field of the social communications.

Prerequisite: Have approved 24 credits in major courses.

COMU 2221 - Sound Production Techniques I (3)

Study of the nature of sound and its behavior. Analysis of how sound is produced , travels and becomes different forms of energy. Theory and practice of the basic concepts and tools that are used in sound production. Requires 30 hours of lecture and 30 hours of lab.

COMU 2222 - Sound Production Techniques II (3)

Study of the theory and practice of the concepts and tools used in sound production in recording studios. Emphasis on the study of the flow of the sound signal, the session of recording, the assembly and the management of microphones and production consoles. Introduction to Pro Tools. Requires 30 hours of lecture and 30 hours of laboratory.

Prerequisite: COMU 2221.

COMU 2226 - Techniques for Recording of Sound (3)

Study of the theory and practice of the concepts and techniques used to record sound in a studio using the program Pro Tools or a similar application. Application of microphone techniques, the assembly of a recording session and the management of clients in real situations. Requires 30 hours of lecture and 30 hours of laboratory.

Prerequisite: COMU 1051, COMU 1075 and COMU 108.

COMU 2228 - Mixture and Postproduction of Sound (3)

Study of the theory and practice of the concepts and techniques used for mixture and postproduction of sound in a studio using the program Pro Tools or a similar application. Emphasis on the use of pluggings or processors of digital audio, synchrony of sound and video, and mixtures for radio, video and musical productions. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: COMU 1051, COMU 1075 and COMU 1080.

COMU 2230 - Live Sound in And Outside the Studio (3)

Study of the theory and practice of the management of sound inside and outside the studio in live productions such as concerts, theatrical works, religious activities, lectures, recordings of video, among others scenarios. Study, use and management of the equipment used, how it is installed and how it is configured . Production of projects of sound, live in real scenarios. Requires 30 hours of lecture and 30 hours of closed lab.

Prerequisite: COMU 2345.

COMU 2240 - Basic Principles of Video Production (3)

Introduction to the basic concepts and techniques of video production. Study of the use of the camera for consumers, illumination and sound for video and preparation for publication with formats of open code programs. Requires 30 hours of lecture and 30 hours of presential closed lab.

COMU 2245 - Planning and Production of Educational Content (3)

Theory and practice of the processes related to the production of educational contents. Study and use of the stages of pre-production, production and post-production. Emphasis on the design of educational materials through use of mass media. Requires 45 hours of lecture/laboratory.

Prerequisite: COMU 1005, 1031, 1035, 1051.

COMU 2250 - Foundations in Social Media Administration (3)

Study of the techniques and the tools available for social media administration. Discussion of measurement techniques and the strategies to reach the audience, as well as the laws, regulations, social responsibility and ethics in social media.

COMU 2340 - Video Production Techniques (3)

Integration of the theory and practice of the techniques and the principles that govern the production of video. Study of the different means of video distribution. Requires 30 hours of lecture and 45 hours of closed lab.

Prerequisite: COMU 1031, 1051 and 2130.

COMU 2345 - Advanced Sound Production (3)

Study of advanced techniques in the production of sound in the studio. The student will put into practice the advanced skills to produce sound for video (jingles, dubbing, among others). Emphasis on the functions exercised by a sound technician. Use and management of programs and equipment used in the industry. It requires 30 hours of lecture and 45 hours of closed laboratory.

Prerequisite: COMU 2226 and COMU 2228.

COMU 2350 - Programming and Musical Arrangements for Videos Seminar (3)

Study of current issues in the field of music for video, including fundamentals of programming and music, virtual and midi instrumentation, dubbing, musical ambience and SFX. Analysis of new trends related to the market, such as equipment, strategies and skills. The approval of the department director is necessary and have 18 credits approved in major courses.

Prerequisite: COMU 2226 and COMU 2228.

COMU 2380 - Legal and Ethical Aspects in the Music Industry (3)

Study of the laws and the federal and state jurisprudence on the most relevant ethical and legal problems related in the music industry. Emphasis on contracts, licenses and copyrights.

Prerequisite: COMU 1051 and COMU 1075.

COMU 2513 - Graphic Production for Identity of Brands (3)

Study and application of the concepts and techniques that guide the production of visual identities of brands, as well as of the ethical aspects that deal with the visual communications industry of brands. Practice in the use and management of a program specialized in the production of vector graphics for the design of visual brand identities. Requires 30 hours of lecture and 30 hours of closed lab.

Prerequisite: COMU 1045.

COMU 2520 - Advanced Voice and Diction (3)

Integration of the theory and practice of the techniques associated with professional voice and diction. Emphasis in the practice of advanced skills of adlibbing and in the creation of a professional demo. Requires 30 hours of lecture and 30 hours of closed lab.

Prerequisite: COMU 2613.

COMU 2610 - Illumination in Photography (3)

Study of the theories of illumination with professional photographic cameras. Emphasis in the light control of the camera, the techniques for the use and manipulation of the natural as well as the artificial light. Use and appropriate management of the lighting equipment. Requires 30 hours of lecture and 30 hours of closed lab.

Prerequisite: COMU 1031.

COMU 2613 - Radio Production (3)

Theory and practice of the techniques and the basic principles that govern the production of sound for the radio by air and in lnternet. Emphasis in the development of concepts, design of proposals, advanced locution and production of radial programs of diverse types. Requires 30 hours of lecture and 30 hours of closed lab.

Prerequisite: COMU 1051 and 2130.

COMU 2621 - Digital Photographic Manipulation (3)

Study and application of the advanced concepts of organization, edition, storage, impression and distribution of digital images. Practice in the use and handling of the camera and computer programs to manipulate digital photos. Requires 30 hours of lecture and 30 hours of closed lab.

Prerequisite: COMU 1025 and 2610.

COMU 2622 - Advanced Photography (3)

Application of advanced techniques for photographic production. Practice in the use and handling of equipment and software by combining techniques and creativity for the creation of photos. Requires 30 hours of lecture and 30 hours of closed lab.

Prerequisite: COMU 2610, 2621.

COMU 2840 - Project Design and Production in Educational Technology (3)

Planning, production, preparation for publication and self-evaluation of a multimedia project with educational aims.

Writing of a proposal and production of multimedia content that integrates the concepts of video, photography, sound and graphical design. Requires 30 hours of lecture and 30 hours of presential closed lab

Prerequisite: Have approved 24 credits of the major and receive the authorization of the department's chair.

COMU 2910 - Supervised Practice (4)

Practical work experience in an Educational Technology Center.   Requires a minimum of 100 hours of practice during the academic term and attendance once per week at lectures coordinated by the practice advisor.

Prerequisite: Authorization from the department's chair. Students must have passed 28 credits in COMU courses with a minimum grade of C.

COMU 2915 - Supervised Practice (4)

Practical experience in a real work environment in the area of photography. Requires a minimum of 100 hours of practice during the academic term in addition to 30 hours of lecture coordinated by the practice advisor.

Prerequisite: Authorization from the department's chair. All major courses must have been passed with a minimum grade of C and students must have completed 21 credits in COMU courses.

COMU 2920 - Photographic Portfolio (3)

Planning, production, edition, publication and self-evaluation of the professional photographic portfolio. Requires 30 hours of lecture, 30 hours of laboratory.

Prerequisite: Have approved 18 credits in major courses with a minimum grade of C and the authorization from the department's chair.

COMU 2970 - Seminar on New Trends in Photography (2)

Study of current topics in the field of photography. Analysis of the new trends related to the market, such as strategies, skills, the relation photographer-client, the work conditions and the changes in equipment.

Prerequisite: Have approved 18 credits in major courses with a minimum grade of C and the authorization from the department's chair.

COMU 2973 - Seminar in Educational Technology (3)

Study of current topics in the field of educational technology. Analysis of the new trends related to the market, such as equipment, strategies, skills, the new

distribution channels, and work conditions, among others topics.

Prerequisite: Have approved 24 credits in major courses with a minimum grade of C and the authorization from the department's chair.

COMU 2980 - Portfolio / Final Project (3)

Planning, production, edition, publication and self-evaluation of the professional sound portfolio.Requires 30 hours of lecture and 30 hours of closed laboratory.

Prerequisite: Have approved 24 credits in major courses with a minimum grade of C and the authorization from the department's chair.

COMU 3000 - Research Processes in Communications (3)

Description of the quantitative and qualitative methodology in the professional practice of the field of social communication. Discussion of the characteristics of the various methods and their applications.

COMU 3001 - Strategic Planning (3)

Development of corporate strategic thought that enables the student to design, analyze and evaluate corporate strategic plans.

Prerequisite: COMU 2001.

COMU 3002 - Psychology of Communication (3)

Analysis of the behavior of human beings as consumers of mass media messages from a psychological perspective. Discussion of the processes that affect the attention, analysis and interpretation of the communication messages.

COMU 3010 - Writing for Journalistic Communication (3)

Development of journalistic writing skills with an emphasis on legibility, clarity, fluid style, creativity and adequate use of language.

Prerequisite: COMU 2000, GEEN 2203.

COMU 3013 - Public Relations Plan (3)

Study and analysis of the necessary processes for implementing a public relations plan. Discussion of the research process, objectives, strategies, cost plan, selection of communication media, implementation of program and its evaluation. Analysis and discussion of cases related with public relations programs.

COMU 3015 - Advertising Projects (3)

Planning, preparation and implementation of advertising campaigns. Emphasis on the creation and composition of advertising messages, market research, of goods and services, audience analysis, position of advertising cost, evaluation of effectiveness and campaign control. Study and analysis of advertising cases.

COMU 3020 - Interpersonal Communication: Techniques and Style (3)

Presentation, analysis and utilization of strategies for the development of assertiveness; techniques for initiating and maintaining communication in journalistic situations.

COMU 3021 - Production for Multimedia (3)

Production of advertising contents and public relations for traditional and emerging audiovisual media. Includes the preparation of librettos and production techniques applied to public relations, publicity and marketing. Requires activities in an open lab.

COMU 3025 - Integral Communication of Brand Names (3)

Application of the principles of planning, management and evaluation of integrated brand communications.

Prerequisite: COMU 2031 and MKTG 1210.

COMU 3030 - Production of Research Reports (3)

The process of producing research reports that include analysis of the audience, selection of topics, collection of data and writing for different media.

Prerequisite: COMU 2010, 3020.

COMU 3040 - Video Field Production (3)

Application of the principles and the techniques that govern video field production Practice in the design of concepts, use and handling of equipment used for exterior video films, and the process of digital edition for the production of concepts. Requires 30 hours of lecture and 45 hours of closed lab.

Prerequisite: COMU 2340.

COMU 3043 - Advanced Production for Radio (3)

Theory and practice of principles and advanced techniques that control different types of radio program production. Emphasis on the development of concepts, proposal design and production of advanced genres for radio production. Requires 30 hours of lecture and 30 hours of closed lab.

Prerequisite: COMU 2613.

Prerequisite: COMU 2613.

COMU 3050 - Seminar on Online Radio Production (3)

Application of appropriate operational processes and production of a radio transmitter through Internet in a real work context. Includes writing for the media, the manipulation of sound, voice and diction and production for the radio in the operation of an online radio transmitter.

Prerequisite: COMU 3043.

COMU 3135 - Writing of Dramatic Librettos (3)

Study and application of the foundations and techniques used in the writing of the dramatic libretto. Emphasis in the development of a history, the creation of characters and environments, the writing of dialogs, as well as the technical elements. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: COMU 3040.

COMU 3140 - Graphic Design for Video (3)

Application of the principles and the advanced techniques for the creation of static graphs and moving graphs. Emphasis in the conceptualization and the design of the group of graphs that is used in video production. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: COMU 2513 and 3040.

COMU 3325 - Photojournalism (3)

The use of photography to document events in written and electronic media. Requires 30 hours of lecture and 30 of closed lab.

Prerequisite: COMU 1031, 2123 and 2621.

COMU 3345 - Administration and Production of Content for Social Media (3)

Analysis and application of the techniques and the tools available for the administration and production of contents for social media. Emphasis in the production of contents, as well as in the diffusion and the measurement of the effectiveness of the contents. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: COMU 2123.

COMU 3410 - Production of Multimedia Contents for Internet (3)

Application of the concepts and theory related to the

production of multimedia journalistic contents for Internet. Emphasis in the production of articles for multimedia integrating text, sound, videos, graphs and photos. Requires 30 hours of lecture and 30 hours of closed lab.

Prerequisite: COMU 3040 and 3345.

COMU 3435 - Illumination for Video (3)

Application of specialized techniques in the design of interior as well as exterior lighting for video. Emphasis on advanced lighting skills, conceptualization of foreground and background lighting, assembly of lighting areas and diagnosis of video quality. Requires 30 hours of lecture and 45 hours of lab.

Prerequisite: COMU 3040.

COMU 3521 - Advanced Production of Studio Videos I (3)

Advanced techniques in the production of videos in studios using multiples cameras. The student will put into practice the skills of planning, writing, production of videos and sound, as well as graphical design for the production of complex programs in video. Emphasis in the functions performed by the equipment and in the use and handling of the equipment that is used in the production of videos in studios with multiple cameras. Requires 30 hours of lecture and 45 hours of closed lab.

Prerequisite: COMU 2613 and 3040.

COMU 3522 - Advanced Production of Studio Videos II (3)

Advanced techniques in the production of videos using one or multiple camaras. Emphasis in the planning and production of announcements, minidocumentaries and dramas. Requires 30 hours of lecture and 45 hours of lab.

Prerequisite: COMU 3521.

COMU 3970 - Current Topics in Communications (3)

Discussion of current topics in the field of the communications. Design of special projects based on the subjects discussed.

COMU 4020 - Design and Production of a Project for Social Media (3)

Planning, design, production and management of a project for social media. Writing of a proposal, production of content and management of the social accounts of a client. Requires 30 hours of lecture and 30 hours of closed lab. Prerequisite: COMU 3410

Prerequisite: COMU 3410.

COMU 4320 - Legal and Ethical Aspects (3)

Analysis of the legal and ethical issues in the federal and state jurisprudence that are relevant to the communication professions. Discussion of the codes of ethics in the communication professions along with taspect related to freedom of speech.

Prerequisite: Have approved 50 credits toward the degree.

COMU 4410 - Management and Entrepreneurship for Mass Media (3)

Study of the theories of administration and concepts of measurement of the audience that govern management for mass media. Study of the foundations of business and the process to develop a model of businesses.

Prerequisite: Have approved 50 credits of the major courses.

COMU 4444 - Fundamentals of Media Research (3)

Application of the basic techniques of scientific-social research in mass media. Emphasis in research design, the sampling, the instruments for data collection, interpretation and the application of the results. Planning and development of a research subject. Requires 30 hours of lecture and 45 hours of closed lab.

Prerequisite: MAEC 2221 and have approved 60 credits of the major courses.

COMU 4491 - Professional Practice (6)

Practical experience in a work environment related to the student's major. This practice will be carried out in a company, institution or organization in or outside Puerto Rico, with which the Institution has established an agreement. Requires more than 300 hours of practice during the academic term.

Prerequisite: Have approved 66 credits of the major courses with a minimum of 3.00.

COMU 4492 - Academic Internship (6)

Educational experience in areas related to the student's major in a University outside Puerto Rico that forms part of the partnerships established with the Institution. Requires a minimum of 90 contact hours.

Prerequisite: Have a minimum of 3.00 in the major courses, and the authorization of the department's chair. .

COMU 4493 - Professional Practice (3)

Practical experience in a work environment related to the student's concentration. Said practice will be carried out in a company, institution or organization in or outside of Puerto Rico, with which the Institution has established agreements. It requires a minimum of 135 hours of practice during the academic term. Requirement: have approved 60 concentration credits with a minimum index of 3.00.

COMU 4494 - Academic Internship (3)

Educational experience in areas related to the student's concentration at a University outside of Puerto Rico that is part of the consortia established with the Institution. Comply with a minimum of 45 contact hours. Requirements: have a minimum academic concentration index of 3.00 and the authorization of the department's chair.

COMU 4910 - Supervised Practice (Bachelor's Degree) (4)

Experience in a real work environment in an institution approved by the Department.   A minimum of 200 hours of practice is required during the academic term, besides attending lectures once a week coordinated by the practice advisor.

Prerequisite: Have approved all the courses of the sub-major with a minimum grade of C and have approved 60 credits in COMU courses. Authorization from the department's chair.

COMU 4920 - Internship (6)

Application of theoretical knowledge to real situations in an organizational context; practice in real scenarios in the world of work. Students are required to devote at least 225 hours to the internship and to attend several internship seminars.

Prerequisite: Have approved 18 credits iof the major courses and have approved all sub-major courses with a minimum of 2.50 and a minimum GPA of 2.00.

COMU 4970 - Seminar in Journalism (3)

Current topics in the area of journalism. Analysis of specific cases. Students must devote a minimum of 20 hours as observers in a real journalism work scenario or its equivalent.

Prerequisite: Have approved 18 credits in the journalism sub-major.

COMU 4973 - Seminar in Public Relations and Publicity (3)

Current topics in the field of public relations and publicity. Analysis of specific cases. Students must devote a minimum of 20 hours per in a real public relations or advertising work scenario or its equivalent.

Prerequisite: Have approved 18 credits in the public relations and advertising sub-major.

COTN - Computer Technology and Networks

COTN 1120 - Computer Program Design (3)

Discussion of the fundamental concepts and strategies for the design and creation of computer programs. Introduction to programming through the use of a visual programming language. It requires additional hours of open laboratory.

COTN 1131 - Electronics I (3)

Discussion of the concepts of electricity, electronic components and functions. Analysis of electronic circuits using Kirchhoff's, Thevenir's and Norton's laws and network theorems. Emphasis on the discussion of circuits of direct and alternating current. Requires 30 hours of lecture and 45 hours of closed laboratory.

Prerequisite: GEMA 1200.

COTN 1210 - Computer Mathematics (3)

Study and discussion related to the Boolean algebra, the truth table, the numerical systems, the binaries, the octal, the hexadecimals, their arithmetic operations and their application to computer science. Representation of symbolic characters using the ASCII code.

COTN 1220 - Data Communication (3)

Study of the concepts and terminology associated with the dynamic industry of data communication. Study of the development of computerized communications, data communications components, architecture and interconnection of data networks, and work trends in communication networks.

COTN 1230 - Microcomputer Operating Systems (3)

Study and evaluation of the operation of the main operating systems. Identification of hardware requisites. Installation and configuration of operating systems on various platforms. It requires 30 hours of lecture and 30

hours of closed laboratory.

COTN 2121 - Network Administration I (3)

General introduction to the administration of modern networks. System administration and responsibilities, management of resources, basic components, types of networks, addressing, expansion and interconnectivity. It requires 30 lecture hours and 30 laboratory hours.

Prerequisite: COTN 1220.

COTN 2122 - Network Administration II (3)

Application of the knowledge and practical experiences of a network. Installation of network programs on a server and its nodes. Theoretical and practical study of topics related to the administration of networks, the different platforms of software applications, the control of shared resources, the procedure and security methodologies and installation of servers. It requires 30 lecture hours and 45 laboratory hours.

Prerequisite: COTN 2121.

COTN 2132 - Electronics II (3)

Discussion of alternating current circuits and electronic circuits, solid state devices; semi conducting diodes, bipolar transistors, digital circuits, combinations and sequences. Includes amplifier, rectifier and filter design. Requires 30 hours of lecture and 45 hours of closed laboratory.

Prerequisite: COTN 1131.

COTN 2150 - Implementation of Network Applications (3)

Discussion of the installation and configuration of the programs used in the market in personal computers and network systems. It requires 30 hours of lecture and 30 hours of closed laboratory.

Prerequisite: COTN 2121.

COTN 2160 - Network Installation and Configuration of Routers and Switches (2)

Planning, design and implementation of modern networks. Emphasis on skills for the installation and configuration of networks based on structured cabling and its comparison and integration with wireless networks. Management and configuration of communication devices, such as routers and switches. It requires 30 hours of lecture and 45 hours of closed laboratory.

Prerequisite: COTN 2121.

COTN 2210 - Diagnostics and Maintenance of Computerized Systems (3)

Analysis and maintenance of the main computerized systems equipment through the use of software and diagnostic equipment. Analysis of quotations and optimizations of system components. Requires 30 hours of lecture and 30 hours of closed laboratory.

Prerequisite: COTN 1131 and 1230.

COTN 2220 - Design and Implementation of Web Applications (3)

Planning, development, publication and evaluation of portals for the Internet. Use of existing design applications for Web pages in the labor market. Conference-laboratory. It requires additional hours of open laboratory.

Prerequisite: COTN 1120.

COTN 2230 - Network Diagnosis, Service and Maintenance (3)

Application of techniques for the identification of problems or degradation of the system by the use of diagnostic programs. Installing new workstations, servers, and network interconnections. Diagnosis and replacement of physical components of a network. Requires 30 hours of lecture and 45 hours of closed laboratory.

Prerequisite: COTN 2121.

COTN 2910 - Practicum (2)

Practice in the design and configuration of network systems and interconnections and the use of new computer system products on the market. Requires 100 hours of practical experience in the private sector in administration, installation and repair of computer systems.

Prerequisite: A minimum of 30 credits of the major courses and authorization of the department's chair.

COTN 3300 - Architecture of Computerized Systems (3)

Analysis of the organization and structure of the principal components of computerized systems. Includes multiprocessing, batch processing, multiprogramming, shared time, memory hierarchy, access strategies, virtual memory, processors, cost analysis and considerations in computer design. Evaluation of costs and other factors related to the design of computerized systems.

Prerequisite: COTN 2210.

COTN 3310 - Database Analysis and Design (3)

Study of the different models of existing databases. Design and implementation of a database based on the analysis of the structure of the databases. Evaluation of the operational requisites for its implementation. Conference-laboratory. It requires additional hours of open laboratory.

Prerequisite: COTN 2220.

COTN 3315 - Analysis and Design of Computerized Systems (3)

Analysis of computer systems and the work environment of system analysts. Identification of the basis ways of design and the principles of project management. Study of the different methods of designing a system and the principles of project management.

Prerequisite: COTN 3310.

COTN 3400 - Introduction to Cyber Security (3)

Study of the concepts and terminology used in cyber security. Emphasis in the methods of protection and inspection when an incident of information security occurs.

Prerequisite: COTN 1220.

COTN 3415 - Network Policies and Disaster Recovery (3)

Study of the basic concepts to assure the continuity of the business operations. Analysis of the planning and recovery from disasters, such as: redundance (for systems and data), tolerance to system fails, energy and environment conditioning, secutiry copies, recivery strategies and clusters grouping.

COTN 3515 - Risk Management (3)

Study of the problems that face the administration responsible of the guarantee of the security of the organizational technology, the communications and the data infraestructure. Examine the topics of operative risks, project management, cyber security, recovery from disasters and protection of intelectual property.

COTN 3971 - Emerging Topics in Network Technology (3)

Analysis of the most recent changes in network technology and their application in the business environment.

Prerequisite: COTN 2122 and 2160.

COTN 4150 - Network Security (3)

Analysis, design and implementation of security measures. Emphasis on encryption, authentication, access control, traffic filtering. Evaluation of the prevention measures currently used in data networks and their ethical-legal implications. It requires 30 hours of lecture and 45 hours of closed laboratory.

Prerequisite: COTN 2122 and 2230.

COTN 4160 - Introduction to Vulnerability Testing (3)

Study of the vulnerability (penetration) tests and its legal and compliance requirements. Emphasis in the primary tactics of recognition (active and passive), discovery and identification of vulnerabilities, explotation and persistence. Study of the methods to realice server atacks, client, "man-in-the-middle"(MITM) and social engineering.

Prerequisite: COTN 4150.

COTN 4200 - Cryptography (3)

Analysis of the different types of electronic encryption used in information systems. Emphasis on the use of encryption mechanisms to secure resources in a network environment. It requires 30 hours of lecture and 30 hours of closed laboratory.

Prerequisite: COTN 4150.

COTN 4240 - Network Defense (3)

Discussion of the concepts related to the protection of a network against an attack. Study of the network functioning, theorical threatens and discussion of the possible measures. Discussion and description of the administratives directives that protect the newtworks and the threatens to virtual private networks (VPN). Analysis of the methods of detection and action, and the use of a variety of firewalls.

Prerequisite: COTN 4150.

COTN 4250 - Network Intrusion Detection (3)

Analysis of the TCP/IP protocols functioning with emphasis in the detection of networks intruders. Study of the protocols of common application and a general approach to investigate and comprehend new protocols. Study of the tools that are mostly used in the industry for the detection of intruders and how to instrument this protections. prepare a detailed report of incidents and it reconstruction.

Prerequisite: COTN 2160.

COTN 4300 - Information Systems Management (3)

Planning, direction, organization and control of an information processing center. Methods of selection and acquisition of equipment, applications and systems development.

Prerequisite: COTN 3315 and BADM 1550 or BADM 1900.

COTN 4500 - Computer Assembly (3)

Selection and acquisition of parts and equipment for computer construction. Design and construction of a personal computer. Study of the modification process and techniques for implementing the system. Analysis of quotations and optimization of system components. Requires 30 hours of lecture and 45 hours of laboratory.

COTN 4910 - Practicum (3)

Practical experience in a real scenario of supervised work in the area related to the program. Analysis and discussion of problems and practical situations that arise in the work environment. Supervision of the student's performance of the skills acquired. It requires the student to dedicate 180 hours during the academic term to develop the assigned project.

Prerequisite: Authorization of the department's chair.

CRIM - Criminology

CRIM 2010 - Sociology of Law (3)

Sociological and historical description of the different legal structures: their development, institutionalization and praxis. Emphasis on State organisms and their power relationships.

CRIM 2020 - Victimology (3)

Identification of the characteristics of criminal behavior with emphasis in the victim-killer relation. Description of the passive-active participation of the victims of crime with emphasis on prevention strategies.

CRIM 2100 - Penology and Society (3)

Distinction of the strategies to protect society from the behaviors typified as crimes. Description of the stages of the penal process. Explanation of prevention strategies of criminal recidivism.

CRIM 2200 - Language, Society and Criminality (3)

Introduction to pathological linguistics and the analysis of the speech applied to the study of the language in the legal system. Emphasis in the crimes based on the use and abuse of language within the legal system.

CRIM 397_ - Special Topics in Criminology (3)

Analysis and discussion of specific topics related to criminology.

CRIM 3000 - Informatics and Criminality (3)

Discussion of the theoretical, technical and legal matters of informatics crimes. Analysis of the strategies of prevention and criminological intervention.

CRIM 3014 - The Media and Crime (3)

Distinction of the interrelation between mass media, public opinion, criminality and the State. Analysis of the messages of massive communication.

CRIM 3020 - Statistical Methods Applied to Criminology (3)

Analysis and statistical data processing applied to criminology. Emphasis on the analysis of the descriptive and inferential statistics most used in social research. Application of the statistical knowledge by means of the use of the technology in computer to the criminological research.

Prerequisite: GEMA 1000, GEIC 1010.

CRIM 3021 - Diversity and Criminality (3)

Analysis of the processes of inclusion and exclusion from the multiple manifestations of diversity. Emphasis in the identification of the criminalized difference discursively.

CRIM 3040 - Mental Disorders and Criminology (3)

Evaluation of the biopsychosocial factors that lead to social deviations. Analysis and integration of the different theoretical perspectives related to the mental disorders that contribute to the development and perpetration of criminal acts.

Prerequisite: PSYC 1051, CRIM 2010.

CRIM 3500 - Philosophy of Criminological Knowledge (3)

Discussion of the epistemological, ontological and axiological foundations of social-scientific knowledge. Analysis of their implications within criminological research.

CRIM 3838 - Deviant Behavior, Antisocial and Criminal Sociology (3)

Study of the main currents of thought related to deviant, antisocial and criminal behavior. Discussion of the social aspects that promote this behavior and the different modalities of intervention and prevention.

Prerequisite: SOCI 1030.

CRIM 4015 - Criminological Social Research (3)

Analysis of the philosophical, theoretical and methodological principles most used in criminological social research. Application of scientific social knowledge in the search for solutions to criminality.

Prerequisite: CRIM 3500 and 3900.

CRIM 4020 - Terrorism and Society (3)

Analysis of the origin and development of the terrorism. Emphasis on the trends and consequences of terrorism at the national and international levels from different perspective: historical, political, religious, economic and the social.

CRIM 4030 - Contemporary Social Problems (3)

Analysis of the contemporary social problems of criminological interest. Discussion of matters of social interest at the local and global level.

CRIM 4970 - Contemporary Theoretical Debates in Criminology (3)

Survey of the main currents of criminological thought: similarities, differences, strengths and weaknesses. Analysis and discussion of current theoretical debates.

Prerequisite: A minimum of nine credits from the major.

CTMR - Computerized Tomography and Magnetic Resonance

CTMR 3000 - Introduction to Computerized Tomography and Magnetic Resonance (2)

Introduction to the operational aspects of the equipment of computerized tomography and magnetic resonance and to the components of the digital system. Discussion of the operation of the equipment to carry out the radiological procedures of both modalities. Emphasis on the proper treatment of patient care during the procedures.

CTMR 3010 - Sectional Anatomy and Pathophysiology (4)

Study of the anatomical structures and their pathophysiology. Identification of these in the different planes by means of the use of x-ray sectional images and corpses in computerized tomography and magnetic resonance. Description of the particular anatomy of each observed structure according to the images of both modalities.

CTMR 3020 - Physics of Computerized Tomography (3)

Introduction to the historical development and the evolution of computerized tomography. Analysis of the physical principles and the quality of the image. Discussion of the acquisition methods and data processing. Emphasis on the components of the acquisition system and on the reconstruction of the image.

CTMR 3025 - Physics of Magnetic Resonance (3)

Introduction to the historical development and evolution of magnetic resonance. Analysis of the physical principles and the quality of the image. Discussion of the methods of acquisition and data processing. Emphasis on the components of the system of acquisition and on the reconstruction of the image.

Prerequisite: CTMR 3000, 3010.

CTMR 3050 - Procedures and Pathology in The Images of Computerized Tomography (4)

Study of the protocols and the pathology in computerized tomography. Discussion of the indications to carry out the procedures. Analysis of the implications that the use of contrast methods have and their reactions to the patient. Review of the images obtained by means of computerized tomography.

Prerequisite: CTMR 3000, 3010.

CTMR 3060 - Procedures and Pathology in The Images of Magnetic Resonance (4)

Study of the protocols and the pathology in magnetic resonance. Integration of the use of antennas, sequences, protocols and positioning of the patient. Evaluation of the implications of the use and the reactions to the contrast methods. Review of the images obtained by means of magnetic resonance.

Prerequisite: CTMR 3000, 3010.

CTMR 4010 - Computerized Tomography MSK (3)

Analysis of the techniques of tracking related to the criteria for the acquisition of ultrasound high resolution images applied to the muscular skeletal regions in computerized tomography. Includes the criteria of position, protocol options and interventional procedures with the use of contrast methods.

CTMR 4011 - Magnetic Resonance MSK (3)

Analysis of the techniques of tracking related to the criteria for the acquisition of ultrasound high resolution images applied to the muscular skeletal regions in Magnetic resonance. Includes the criteria of position, protocol options of and interventional procedures with the use of contrast methods.

CTMR 4030 - Integration Seminar (2)

Integration of the knowledge, skills and attitudes in the realization of radiological studies subspecialized in computerized tomography and magnetic resonance.

Prerequisite: CTMR 3020, 3025, 3050, 3060.

CTMR 4910 - Clinical Practice in Computerized Tomography (4)

Supervised clinical experience for the integration of the technical skills and the knowledge required of a technologist in diagnostic images in computerized tomography. Practice under the supervision of the clinical instructor in an cooperating agency. Two Hundred forty (240) hours of practice.

Prerequisite: CTMR 3020, 3050.

CTMR 4920 - Clinical Practice in Magnetic Resonance (4)

Supervised clinical experience for the integration of the technical skills and the knowledge required of a technologist in diagnostic images in magnetic resonance. Practice under the supervision of the clinical instructor in a cooperating agency. Two Hundred forty (240) hours of practice.

Prerequisite: CTMR 3025, 3060. 4910.

CYBE - Cyber Crimes

CYBE 3033 - Cyber Crimes I (3)

Study of the principles and foundations of the etiology of cybercrime and the modalities in which it is carried out. Identification of cyber crime prevention strategies.

CYBE 4150 - Cyber Crimes II (3)

Examination of activities and methodologies related to the preservation of information collected from electronic devices such as computers, cell phones, printers, computer networks, RAM, among other equipment. Prerequisite: CYBE 3033

Prerequisite: CYBE 3033.

CYBE 4522 - Cyber Crimes III (3)

Analysis of the evidence obtained from the equipment intervened in the different scenarios, observing the due process of law. Preparation of reports and testimonies for the simulated presentation of evidence in relevant forums.

Prerequisite: CYBE 4150.

CYSC - CYBERSECURITY

CYSC 1000

CYSC 1000 - Introduction to Cyber Security (3)

Study of the field of cybercrime and cyber security. Discussion of methodologies and approaches to problems associated with threats and attacks against information security. It includes basic concepts of practical cryptography, the values of operating systems, computer networks, database systems, and other types of computer systems. Implications of the fundamentals of the ethical-legal practice of the discipline.

CYSC 3000

CYSC 3000 - Internet of Things (loT) (3)

Study on the new paradigm of the interaction between people and information systems and other associated objects. Emphasis on creative thinking and practical project development. It requires 30 hours of lecture and 30 hours of closed laboratory.

CYSC 3500 - Cyber-Forensics (3)

Analysis of the technical and legal problems faced by computer crime investigators and digital forensic examiners. Students will learn effective and appropriate forensic response strategies to support cybercrime investigative efforts involving computer, mobile, and network traffic. Emphasis on acquiring the skills necessary to identify and collect potential digital evidence and analyze it in the chain of custody to inform forensic findings. It requires 30 hours of lecture and 30 hours of closed laboratory.

Prerequisite: CYSC 1000, COMP 3015 and COTN 2122.

CYSC 397_ - Special Topics in Cyber Security

Analysis of innovative and emerging topics in the areas of information security with an emphasis on research and case studies.

CYSC 4000

CYSC 4100 - Ethical Hacking (3)

Application of the tools and techniques associated with the cybersecurity practice known as ethical hacking or penetration testing. It includes laws and regulations, steps in penetration testing such as planning, scanning, exploitation, and reporting of results. Emphasis on the identification of system vulnerabilities to avoid them and how to solve this problem. It introduces the design of controls to prevent future attacks in real life situations. Includes penetration testing methods and tools. It requires 30 hours of lecture and 30 hours of closed laboratory.

Prerequisite: CYSC 1000, COMP 3015 and COTN 2230.

CYSC 4200 - Economy in Cybersecurity (3)

Analysis of the economic factors related to cybersecurity from the economic and cultural perspective of cybersecurity, the economics of privacy, malware, authentication and vulnerabilities. Evaluation of theoretical models of the economic impact of a cyber-attack. Application of the different mathematical models, investigation methods, measurement of the cost of cybercrime, forensic economics and the business of information security.

Prerequisite: CYSC 4100.

CYSC 4500 - Capstone Project (4)

Development of a project in areas related to cyber security under the direction of a faculty member.

Prerequisite: CYSC 3500 and CYSC 4100.

DANC - Contemporary Dance

DANC 2000 - Corporal Awareness and Anatomy (3)

Study of the different parts from the body, their functions and their creative potential in the context of movement. Knowledge and application of anatomical terminology in performance in the field of dancing.

DANC 2010 - Principles and Techniques of Contemporary Dance (3)

Analysis of the conceptual approaches of contemporary dance and their background. Emphasis on the decade of the 60s as a starting point to study the theory and practice of the development of contemporary dance.

DANC 2230 - History of Contemporary Dance (3)

Study of the history of the contemporary dance and related forms from the modern dance to the present time. Discussion of the origins, periods, trends, techniques, creators, influences and the companies that have contributed to the development of the contemporary dance.

DANC 2240 - Dynamics of The Body in the Caribbean Dance (3)

Study of the dynamics of movement in the Caribbean dance and the corresponding rhythmical structures. Use of experimentation techniques aimed at activating the imaginative capacity both individually and collectively. Anthropological review of the musical and dance forms of the Hispanic Caribbean.

DANC 3020 - Contemporary Dance Teaching Strategies (3)

Theoretical and practical analysis of the methods and techniques in teaching dance. Discussion of the strategies for teaching dance in diverse contexts and educational environments.

DANC 3250 - Choreographic Principles (3)

Discussion of theoretical and practical principles of the choreographic process. Analysis of concepts regarding form, rhythm, space, time and energy, as well as of the use of different genres and musical forms. Study of diverse techniques of choreographic composition and development of movement, with emphasis on the search of one's own expression.

DANC 3360 - Production of the Arts (3)

Discussion and practice of the phases that make up a production, from the conceptual development and the artistic creation to the presentation and post-production. Identification and discussion of the esthetic, legal, labor and economic aspects to create an artistic project, as well as the strategies to obtain financial support.

DGDM - Digital Graphic Design and Multimedia

DGDM 1101 - History of Graphic Design (3)

Study of the history of graphic design from the origins of humanity to the digital era. Discussion of the appearance of visual language through pictograms and ideograms, as well as the development of the first alphabets.

DGDM 1103 - Foundations of Graphic Design (3)

Discussion of the fundamental guides of esthetic order in graphic composition. Analysis of the elements, principles, resources and the other general rules of the arts that govern graphic design. Development of practical skills in graphic composition by using natural resources and commercially elaborated material.

DGDM 1104 - Analysis of Graphic media (3)

Analysis of the influence of graphic media in the Puerto Rican society and in other cultures, especially through the phenomenon of globalization and multiculturalism. Discussion of language levels, communication codes and the linguistic codes of different graphic works produced socially and commercially to identify discursive practices and ideological dimensions.

DGDM 1201 - Digital Photography Applied to Graphic Design I (3)

Introduction to the technical aspects of digital photography applied to graphic design. Study of the effect of natural light, the effect of artificial light and the instruments, which are essential to obtain the appropriate and quality illumination in both inside and outside scenes. Identification of the essential things that should be taken into account when taking a picture to be used in a traditional graphic medium or digital graphic medium. Practice in photographic exercises that culminate in the production of a digital photographic portfolio. Requires 30 hours of lecture and 30 hours of closed lab.

DGDM 1202 - Digital Photography Applied to Graphic Design II (3)

Practice in the handling of professional digital cameras, the optical photometry, digital sensors and indoor and outdoor illumination. Selection and use of filters, the objectives and other equipment and tools to be used in different scenes related to publicity, fashion and other photographic fields. Preparation of professional projects using advanced digital techniques of photographic edition with current software in the field of graphic design. Requires 30 hours of lecture and 30 hours of closed lab.

Prerequisite: DGDM 1201.

DGDM 2201 - Digital Graphic Design I (3)

Development of the basic skills in the use of thr graphic design software existing on the market. Study of photography and typography as essential elements of graphic communication. Preparation of vector graphics, photographic alterations and restoration of old or damaged images to be used in different graphic publication media. Requires 30 hours of lecture and 30 hours of closed lab. Prerequisite: DGDM 1103.

Prerequisite: DGDM 1103.

DGDM 2202 - Digital Graphic Design II (3)

Development of the most advanced skills in the use of the graphic design software existing on the market. Development of digital language through design, composition and production of elaborated digital graphic works. Performance of digital treatment of images through edition and optimization of images for publishing design, Web design or multimedia. Requires 30 hours of lecture and 30 hours of closed lab.

Prerequisite: DGDM 2201.

DGDM 2203 - Design and Graphic and Digital Typesetting (3)

Discussion of typography as one of the main elements of graphic communication and its impact on graphic design. Review of the different typesetting families and styles, as well as other graphic symbols, such as the ornamental numbers and elements. Application of the elements of typesetting structure in graphic communication. Requires 45 hours of lecture-lab.

Prerequisite: DGDM 1104, 2201.

DGDM 2204 - Introduction to Multimedia Design (3)

Planning, design and implementation of simple projects of multimedia and Internet. Includes Web pages that take into consideration the different elements that permit their functionality, navigability and interactivity. Requires 30 hours of lecture and 30 hours of closed lab.

Prerequisite: DGDM 2201.

DGDM 2205 - Semiotics and Graphic Communication (3)

Discussion of the theoretical explanations of semiotics and the importance of this in graphic communication. Study of

the different historical currents of semiotics and of the visual and linguistic signs in visual organizations. Analysis of the correlations of iconic semiotics, symbolic semiotics or of graphic discourse in the process of production and reproduction of social knowledge. Discussion of the fundamental methodologies of graphic discourse in the diverse cultural contexts in which they take place.

Prerequisite: DGDM 2203.

DGDM 2206 - Writing for the Digital Format and Video Production (3)

Application of the theoretical and practical foundations of the writing of librettos from a communication system that integrates both visual and sound elements. Creation of stories and characters to elaborate a libretto or storyboard that facilitates the production of multimedia videos. Requires 45 hours of lecture-lab.

Prerequisite: DGDM 2203.

DGDM 3014 - Corporate Identity Design and Visual Identity (3)

Discussion and application of the basic concepts in the identity and image of some corporation, or public or private institution. Analysis and design of the graphic and visual elements that identify the company or institution. Requires 45 hours of lecture-lab.

Prerequisite: DGDM 1202, 2203.

DGDM 3015 - Packaging Design and Displays (3)

Esthetic and functional design of packages and displays for promotion, product marketing and graphic services. Study of the versatility of the formats, sizes, and the digital and traditional media most appropriate. Analysis of the visual elements of graphic design. Requires 45 hours of lecture-lab.

Prerequisite: DGDM 1202, 2203.

DGDM 3016 - Principles of Animation (3)

Application of the foundations and methodologies of the molding of bi-dimensional objects. Analysis of the artistic principles, of animation expression and the performance of bi-dimensional animation practice with current software on the market for new digital graphic media. Study of the storyboarding art. Discussion of the basic principles of illumination and rendering through molding and animation of simple objects. Requires 30 hours of lecture and 30 hours of closed laboratory.

Prerequisite: DGDM 2204.

DGDM 3021 - Design and Multimedia Production I (3)

Analysis of the current technologies, instruments and methodologies in the field of the design and production of multimedia. Design, development and production of interactive, digital, multimedia projects that incorporate dynamic elements to texts, graphics and images. Requires 30 hours of lecture and 30 hours of closed lab.

Prerequisite: DGDM 2204, 3016.

DGDM 3022 - Design and Multimedia Production II (3)

Analysis of the current technologies, instruments and methodologies in the field of design and the production of multimedia. Design, production and edition of professional digital projects of interactive multimedia that include special effects and animation in videogames, advertising videos and film shorts, among others. Integration of the current technologies on the market. Requires 30 hours of lecture and 30 hours of closed lab.

Prerequisite: DGDM 3021.

DGDM 4003 - Ethical and Legal Principles of Graphic Communication (3)

Analysis of the ethical and legal concepts and principles that apply to graphic communication worldwide. Review of the applicable state and federal jurisprudence.

DGDM 4004 - Administration and Marketing of Graphic Media (3)

Analysis of real experiences in the creation of strategies for the development, establishment and consolidation of a graphic company. Emphasis on research, quality, productivity, and the logistics of the business efforts in the internal and external market. Planning and development of a real proposal for the creation of a digital graphic company within a local and global context.

DGDM 4005 - Professional Seminar (3)

Review of the professional and ethical values to achieve the integral formation the future graphic communicator. Analysis of the skills required of the future professional of graphic media to preserve an effective communication between cohorts, supervisor and clients. Discussion of possible work scenarios with ethical and labor conflicts that could occur in these contexts. This course will be taken the academic term prior to the practice.

DGDM 4006 - Design and Production of the Digital Professional Portfolio (3)

Preparation of a digital professional portfolio that makes

use of current software in the graphic world. Demonstration of the capacities and professional competencies in the use of different formats of digital portfolios and of the current software on the market to make the portfolio. Requires 45 hours of lecture lab.

Prerequisite: DGDM 4005. Corequisite: DGDM 4910.

DGDM 4007 - Advertising Campaign Seminar (3)

Design of an advertising campaign as well as that of theoretical models that allow the development of market research and the aspects of psychoanalysis, and the semiological and interdisciplinary aspect that constitute the contemporary culture of modern publicity.

DGDM 4013 - Publishing Design (3)

Review of the art of model-making and the creative composition of publications, such as catalogs, magazines, newspapers and books that make use of current software on the market. Study of the trends, publishing styles and approaches for each format. Analysis and selection of traditional and digital printing methods appropriate for each medium and format. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: DGDM 1202, 2203.

DGDM 4014 - Animation and Three-dimensional Graph (3D) (3)

Analysis of the techniques of 3D modeling and the texturizing of objects using advanced software to create complex animations. Discussion of the application of textures to the three-dimensional models, the creation and edition of materials, the channels of maps, the most complex techniques of illumination, the applications of light, the shades, the use of color and how these affect three-dimensional objects and the process of rendering of three-dimensional animations. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: DGDM 3016.

DGDM 4910 - Practice (3)

Supervised professional practice in a real work scenario. Design and production of professional quality materials, as well as the creative solutions to inherent problems to the field of graphic communication. Requires a minimum of 180 hours of practice under the supervision of a specialist in the area and be approved with a minimum of B.

Prerequisite: Have approved the major courses, except DGDM 4006 and 4007 and the authorization of the department's chair or coordinator.

DSGN - Design

DSGN 1001 - Creative Drawing: General and Figure (2)

Study and practice of drawing using a variety of approaches, methods and media, traditional and experimental techniques. It includes the drawing as a tool and an expressive resource; process and analysis of the environment and its materiality; the line as a prefiguration of an integral image.

DSGN 1002 - Creative Drawing II: Illustration (2)

Study and drawing practice of the illustration as an expressive resource document. Creative drawing as a fundamental process for the illustration through the use of traditional and experimental techniques and media.

Prerequisite: DSGN 1001.

DSGN 1003 - Technical Drawing (2)

Practice of objective drawing from the basic and intermediate domain of two-dimensional and three-dimensional orthographic representation scale drawing. Emphasis on the mastery of technical drawing by hand, computer-assisted drawing and the exploration of techniques of assembly, such as models.

DSGN 1011 - Design Thinking: Research Methods and Process (2)

Examination of the thought of design (Design Thinking) as methodology and intangible process in the research, analysis and the development of innovative solutions and integrators focusing on the user, their needs and context. Study of the design culture focused on the activity and the collaborative exercise for multidisciplinary and multidimensional fields from Visual Thinking.

DSGN 1012 - Universal Design: Anthropometry and Ergonomics (2)

Design to meet the clients' needs. Development of communication systems, goods, services and environments from the perspective of human rights: "design for all" characterized by inclusiveness and accessibility.

DSGN 1013 - Placing, Culture and Design (2)

Examination of the design as a geographical and cultural expression. Exploration of the design from the individual's perspective, his/her environment and his/her effect on the development of historical, technological, economic, and social systems.

DSGN 1100 - Foundation Design Studio And Lab I (3)

Theory and application of the design from the light-color relationship and surface (texture) as essential to visual communication. Analysis of systems of organization and composition through experimentation with light, color and texture in two-dimensional structures. It explores the relationship light-color - surface-form as a sensory and psychological perception.

DSGN 1200 - Foundation Design Studio and Lab II (3)

Application of the theory of the design from the spatial-form relationship. Research and analysis through manipulation of mixed media (analog and digital) of structural systems, organization and three-dimensional compositions for the development of solutions to specific design problems.

Prerequisite: DSGN 1100.

DSGN 1300 - Foundation Design Studio and Lab III (3)

Application of design theory from a space-time relationship in the articulation of movement. Research and analysis of three-dimensional elements and moving images, sequential sorting, narrative, edition of still images and images in motion, sound and image relationships, and object analysis, through the use of digital platforms, photography and videos.

Prerequisite: DSGN 1200.

DSGN 2003 - Design History, Theory and Criticism I (3)

Historiographic matter analysis of critical and theoretical design discourse in its different areas of specialty, from its beginnings until the enlightenment. Research and analysis of the various ideological debates, technological developments and innovation processes from modifications in the means of production, materials, techniques and other socio-economic, political and geographical considerations.

DSGN 2004 - Design History, Theory and Criticism II (3)

Historiographic analysis of theoretical and critical discourse design theory through their different areas of specialty, since the enlightenment until the 21st century. Research and analysis of the various ideological debates, technological.

Prerequisite: DSGN 2000.

DSGN 2100 - Design Studio I (3)

Analysis and interdisciplinary exploration of concepts, notions and basic approaches applied to factual design situations, from three areas: design of visual communication, design of products and services and environmental design. It includes an adequate management of equipment and analog materials, as well as digital platforms.

Prerequisite: DSGN 1300.

DSGN 2110 - Design Workshop I (1)

Development of methods, skills, and techniques of digital and analog representation. Construction of prototypes, two-dimensional and three-dimensional models to scale, basic level. It requires 45 hours of a face-to-face closed laboratory.

Corequisite: DSGN 2100.

DSGN 2200 - Design Studio II (3)

Analysis and interdisciplinary exploration of concepts, notions and intermediate approaches applied to factual design situations, from three areas: design of visual communication, design of products and services, or environmental design. It includes an adequate management of equipment and analog materials, as well as digital platforms.

Prerequisite: DSGN 2100.

DSGN 2210 - Design Workshop I (1)

Development of methods, skills, and techniques of digital and analog representation, construction of prototypes, two-dimensional and three-dimensional models to scale, at an intermediate level. It requires 45 hours of a face-to-face closed laboratory.

Corequisite: DSGN 2200.

DSGN 2300 - Design Studio III (3)

Analysis and interdisciplinary exploration of concepts, notions and advance approaches applied to factual design situations, from three areas: design of visual communication, design of products and services, and environmental design. It includes an adequate management of equipment and analog materials, as well as digital platforms.

Prerequisite: DSGN 2200.

DSGN 2310 - Design Workshop III (1)

Development of methods, skills, and techniques of digital and analog representation, construction of prototypes, two-dimensional and three-dimensional models to scale, at an advance level. It requires 45 hours of a face-to-face closed laboratory.

Corequisite: DSGN 2200.

DSGN 3011 - Design, Society, Market and Branding (3)

Analysis and interdisciplinary exploration of strategic design brands (branding). Scanning through a transversal approach of user-centered design of brands: socioeconomic context, market, psychology, sociology and cultural expressions. Approach to the design as the manager of business initiatives, markets and brands from the analysis and imaging products and services in relation to the public receiver. It includes the management of equipment and similar materials, as well as digital platforms.

DSGN 3021 - Design, Photography and Video in Art and Publicity (3)

Analysis and interdisciplinary exploration of design applied to the photographic media and video in the development of proposals in art and advertising. Exploration of photography and video focused on the user and their socio-economic context, the market, psychology and corresponding cultural expressions. Approach to the design as the Manager of business initiatives from the analysis and imaging products and services in relation to the public recipient. It includes the management of equipment and similar materials, as well as digital platforms.

DSGN 3031 - Creative Illustration for Publications and Media (3)

Analysis and interdisciplinary exploration of the design of creative illustrations for advertising and media. It includes the management of equipment and analog materials, as well as digital platforms.

DSGN 3041 - UX Design: Interactivity for Web, Apps and Videogames (3)

Applications and video games application of the principles of UX for the WEB, mobile apps and games design. Understanding and application of notions about interactive design, technology and enlightenment, among others, for the articulation of innovative proposals.

DSGN 3111 - Environmental Design: Spaces and Furniture Design (3)

Discussion of the principles of the habitable design based on sustainability and efficiency. Application of notions about the production of spaces, industrial design, lighting, materials, technology, manufacturing, construction, and ergonomics, among others, for the articulation of healthy environments, user-centric.

DSGN 3121 - Sustainable Design: Contemporary Urban Landscape (3)

Contemporary reflections on principles of urban design based on sustainability and resilience. Application of notions about urban planning, environmental management, preservation, conservation, reuse, biophilia, mobility, coexistence, activism and urban empowerment for the articulation of smart cities and communities of opportunities.

DSGN 3131 - Wearable Design: Contemporary Experimental Fashion (3)

Design principles applied to pieces of experimental and creative clothing from sustainability and efficiency. Application of notions of pattern design, assembly and production of fashion; materials, technology, manufacturing, construction, ergonomics, anthropometry and illustration, among others for the articulation of innovative proposals.

DSGN 3211 - Contemporary Ceramic Design (3)

Practice and study of the fundamentals of contemporary ceramics as a medium of expression and communication in art and design. Construction of clay artifacts from a conceptual articulation, and a profound formal and technical procedural exploration. Focus on the development of individualized, interdisciplinary multilevel projects.

DSGN 3212 - Experimental Ceramic Design (3)

Application of the foundations of contemporary ceramics as a medium of expression and communication in art and design based on material and technical experimentation research. Construction of clay artifacts from the conceptual articulation and a profound formal and technical procedural exploration. Focus on the development of individualized, interdisciplinary multilevel projects.

DSGN 4901 - Design Research and Practice I (4)

Analysis tools for the identification of a subject, research and the definition of the parameters, objectives and the selection of the methodology for the preparation of a

design project.Grade: P / NP.

Prerequisite: DSGN 2300.

DSGN 4902 - Design Research And Practice II (4)

Development, design, presentation and defense of a professional design project before a committee. Grade: P / NP

Prerequisite: DSGN 4901.

DSGN 4915 - Design Portfolio (4)

Portfolio development to venture into the field of design and presentation for graduate studies.

Prerequisite: DSGN 4901.

ECMP - Educational Computing

ECMP 1010 - Foundations of Educational Technology (1)

Study of the historical and theoretical foundations of the fields of educational technology and educational computation emphasizing their impact on the teaching-learning process. Study of research done on the applications of the theories studied. Study of the theoretical principles of artificial intelligence, human-computer interaction and virtual reality regarding their implications on learning. Analysis of the National Standards of Educational Technology in regard to their implications in the teaching-learning process.

ECMP 2070 - Information and Telecommunications Technologies (3)

Fundamentals of data communication, telecommunications and their relation with the world of information science. Analysis of classifications and topologies; design and implementation of networks for data communication. Study of distributed processing and communication protocols. Methods of evaluating data communication network equipment and software.

ECMP 2090 - Introduction to Computerized Graphic Design (3)

Introduction to the basic techniques of design and edition of computerized graphs. Discussion of computerized graphic design as a means of visual communication. Study of the principles of the theory of color, light and shade and of their properties in different contexts. Principles of typography as an essential element of visual communication. Theory, planning and elaboration of interfaces and multidirectional composition. Requires

additional time in the laboratory.

ECMP 3050 - Design and Implementation of Online Learning (3)

Application of learning principles in the design and development of online learning experiences with emphasis on constructivist approaches. Study of the historical and theoretical foundations of online learning. Discussion of subjects related to publication rights and public regulations and policy regarding the design and implementation of online learning. Discussion of the scope of different online learning technologies on learning. Study of cultural impact on the design and implementation of online learning experiences. Requires additional time in a laboratory.

ECMP 4010 - Administration of Computer Laboratories (3)

Study of fundamental aspects for the administration of a computers laboratory in a school environment. Use of models that facilitate the administration of a computer laboratory. Techniques and management of application program installation processes, preventive maintenance of equipment, and configuration of computer hardware. Diagnosis and solution of problems related to the operation of computer equipment.

ECMP 4020 - Computer Assisted Curricular Design (3)

Design of computerized interactive instructional modules. Analysis of theoretical foundations and models of curricular design. Study of the implications of the incorporation of the computer in curricular design. Emphasis on articulation of curricular design with the Standards of Excellence of the Department of Puerto Rico.

ECOM - Electronic Commerce

ECOM 1210 - Introduction to Electronic Commerce (3)

Study of the basic elements of electronic commerce, factors that trigger development, and necessary technology to implement them. Discussion of the models of electronic commerce markets, their relation with the traditional markets, electronic commerce suppliers and their components: distribution chain management, enterprise resources management, and relationship marketing.

Prerequisite: GEIC 1010, MKTG 1210, BADM 1900.

ECOM 2301 - Electronic Commerce Technical Infrastructure I (3)

Study of the protocols used in Internet, transmission options, components, access and security equipment.

Discussion of the legal aspects related to hiring, protection and confidentiality of user databases.

Prerequisite: ECOM 1210.

ECOM 2302 - Electronic Commerce Technical Infrastructure II (3)

Application of the basic principles for designing a WEB page for a company. Study of the administration of a WEB page. Forty-five hours of lecture-lab.

Prerequisite: ECOM 2301.

EDUC - Education

EDUC 1080 - Field Experiences in The Educational Scenario I (1)

Field experiences through the exposure of the student to diverse educational scenarios in order to observe, analyze and reflect on the school environment, the function of the teacher and another educational and nonteaching personnel. Requires 10 hours in the classroom, a minimum of 10 hours in the educational scenario and a minimum grade of B in the course.

EDUC 2020 - Health, Nutrition and First-Aid (3)

Discussion of concepts and principles related to health, nutrition and first-aid. Prevention as a concept and mental attitude. Includes the study of infectious diseases and other common childhood conditions. Emphasis on the immunization schedule. Relationship between health and nutrition. Importance of breast feeding and good nutrition. Planning a menu that responds to the nutritional needs of children. The appropriate first aid practices to treat common accidents; emphasis on emergency plans and simulations and the function of the teacher in planning a safe and healthy environment inside and outside the school.

EDUC 2021 - History and Philosophy of Education (3)

Critical analysis of the philosophical and historical development of education and its objectives. Consideration of educational practice in light of historical developments in the western world in general and Puerto Rico in particular.

EDUC 2022 - Society and Education (3)

Critical analysis of social, cultural and educational situations and the educational and societal alternatives to attend to these situations. Emphasis on problems and ethical and legal aspects confronting schools in Puerto Rico and in modern society.

EDUC 2031 - Developmental Psychology (3)

Processes of development during the life cycle and their effect on behavior, especially those occurring from birth to old age including death. Identification and analysis of developmental problems and their repercussions on the teaching-learning process and on students' future development.

EDUC 2032 - Learning Psychology (3)

The different approaches and theories of learning and their application to teaching in the classroom, in particular in those cases that promote independent, interdependent, constructive, reflective and critical learning. Analysis and evaluation of the strategies and techniques of teaching derived from these different approaches and theories and their relationship with the general goals of formal education.

Prerequisite: EDUC 2021, 2031.

EDUC 2053 - Nature and Needs of Students with Autism (3)

Discussion of the autism spectrum disorders. Emphasis on the characteristics and types of Autism. Includes etiology, identification, characteristics and needs of these students and the different teaching programs available.

EDUC 2055 - Psycho-Social Aspects of Students with Autism (3)

Analysis of the difficulties in the socialization of the student with autism. Description of the implications of social commitment in learning processes. It includes the interpersonal relationships of students with autism in their social and family environment.

EDUC 2057 - Communication Aspects of Students with Autism (3)

Discussion of communication problems that are manifested in the delay or absence of spoken language. Analysis of functional language problems in autism. It includes the use of stereotyped and self-stimulatory speech.

EDUC 2060 - Integration of Technology in Education (2)

Integration of technology in the educational process through administration of materials and electronic programs. Emphasis on search skills, identification and use of reliable electronic sources of intelligence through different means from the Web.

Prerequisite: GEIC 1010.

EDUC 2840 - Child Development (3)

Detailed study of each stage of development of a child from conception to the period of adolescence.

Prerequisite: EDUC 2031.

EDUC 2870 - The Exceptional Student Population (4)

Discussion of the general characteristics presented by the different groups that comprise the exceptional student population, as well as the strategies and procedures for working with these groups in the regular classroom. Includes the use of technological assistance. Identification of educational services offered to this population in Puerto Rico and the analysis of laws that guarantee their right to education, especially the exceptional student population under 21 years of age.

EDUC 2875 - Language Stimulation (3)

Emphasis on the emergent literacy and relationship between language and thought. The theories and approaches regarding the acquisition and development of language in early childhood. Analysis of factors that affect language development; functions of the teacher and parents in creating an environment that promotes linguistic development. Discussions of characteristics of children with speech and language problems and their etiology. Planning activities for the development of auditory skills, oral expression, comprehension, interpretation and vocabulary enrichment.

EDUC 2890 - Field Experiences in The Educational Scenarios Ii (2)

Field experiences through visits to classrooms at the level in which the future teacher is going to specialize in order to observe, analyze and reflect on the environment in the classroom, the handling of the classroom, the tasks, the daily participation and the control of time, considering the paradigms of teaching. Emphasis on the teacher-student and student-teacher relationships. Requires 15 hours in the classroom, a minimum of 15 hours in the educational scenario and a minimum grade of B in he course.

Prerequisite: EDUC 1080, 2022 and 2031.

EDUC 2905 - Nature and Needs of Students with Intellectual Disability and Mental Disorders (3)

Study of intellectual disability and emotional disorders. The etiology, identification, characteristics and needs of these students are discussed, the different educational programs from the preschool level. Includes orientation to parents and community.

EDUC 2906 - Nature and Needs of Students with Specific Learning Problems, ADD And ADHD (3)

Discussion of specific learning problems, ADD and ADHD. Includes the etiology, identification and characteristics. Emphasis on the needs of these students, the different educational programs beginning at the preschool level, and orientation to parents and the community.

EDUC 2907 - Nature and Needs of The Deaf and Partially Deaf Student (3)

Analysis of the nature needs and classification of the deaf and partially deaf student. Identification of the etiology and characteristics of deaf and hard of hearing students. Emphasis on the comparison of the different educational programs. It includes ethical and legal aspects for this population.

EDUC 2909 - Sign Language in The Context of the Deaf and Partially Deaf Culture (3)

Introduction to the use of basic level sign language. To examine the characteristics of the culture concept in the deaf and partially deaf student. Emphasis on the analysis of the system of values, beliefs and rules that guide the behavior of the deaf and partially deaf student. It includes the basic skills of the interpreter as a profession.

EDUC 2911 - Methodology and Adaptations of Materials for Teaching the Deaf and Partially Deaf Student (3)

Comparative analysis of traditional and innovative methodologies in the educational process of the deaf and partially deaf student. Emphasis on the importance of the interdisciplinary approach, as well as the use of technological resources for teaching.

EDUC 3003 - Nature and Needs of Infants and Preschool Age Children with Developmental Deficiencies (3)

Introduction to early intervention. Topics related to appropriate intervention methods with children up to five years of age with disabilities and the skills that they should develop. Techniques and instruments used to evaluate the development of infants and preschool children that are suspected to have some disability. Students will have the opportunity to analyze existing instruments, construct new instruments and experience the evaluation of a child. The role of the family in the development of the plan for its individualized services and its role in the intervention program.

EDUC 3010 - Social, Emotional and Cognitive Development of The Child (3)

Analysis and study of children in their social and cultural context. Fundamental principles of personality development. Bases for cognitive-moral development and analysis of the relationship of environment-behavior in the development of the child.

Prerequisite: EDUC 2022, 2032.

EDUC 3013 - Teaching Strategies (2)

Careful examination of the strategies used by teachers to establish a favorable learning climate. Study of the most effective teaching methods including those that promote the development of values and their application in the classroom. Utilization of educational technology as a resource aid in class design. Emphasis on the formulation of questions, the problematization of learning and on activities which lead students to meet and build their own understanding. Use of collaborative work (in teams) as a teaching technique.

EDUC 3015 - Clinical Experiences in The Educational Scenario I (2)

Clinical experiences as a student-teacher in a school at the level and in the subject matter of the student's specialty. Emphasis on the student's professional development and the use of effective educational strategies to work with small groups and later with the whole group. Requires 15 hours in the classroom, a minimum of 25 hours in the educational scenario and a minimum grade of B in the course.

Prerequisite: EDUC 2890 and the authorization of the Coordinator or Supervisor of Clinical Experiences.

EDUC 3050 - The Child and The Social Environment (3)

The child in the social and cultural context; analysis of social forces affecting the most important agencies and their contribution toward the achievement of educational goals.

Prerequisite: EDUC 2031.

EDUC 3053 - Diagnosis, Evaluation and Assessment Techniques for Students with Autism (3)

Analysis of the indicators or characteristics of autism according to the current Diagnostic and Statistical Manual of Mental Disorders (DSM). It includes the preparation and interpretation of informal tests and their implications for the placement and preparation of the Individualized Educational Program (IEP). Design and application of informal evaluation techniques and "assessment".

EDUC 3054 - Methodology of Teaching for the Student with Autism (3)

Application of models, methods and teaching techniques with scientific validation for students with autism. Emphasis on the importance of the interdisciplinary approach in their intervention and in the use of technological resources in the education of students with autism.

EDUC 3075 - Mathematics Curriculum, Teaching and Assessment in The Primary Grades (K-3) (2)

Analysis and discussion of the mathematics curriculum with emphasis on the mastery, interpretation and understanding of curricular content in the primary grades. Includes needs assessment and the planning, implementation, evaluation and assessment of the teaching learning process taking into account individual differences. Emphasis on the standards for the mathematics program of the Puerto Rico Department of Education. Critical analysis of computerized programs appropriate for teaching mathematics at this level.

EDUC 3076 - Mathematics Curriculum, Teaching and Assessment in The Primary Grades (4-6) (3)

Analysis and discussion of the mathematics curriculum with emphasis on the mastery, interpretation and understanding of curricular content at the elementary level. Includes needs assessment and the planning, implementation, evaluation and assessment of the teaching learning process taking into account individual differences. Emphasis on the standards for the mathematics program of the Puerto Rico Department of Education. Critical analysis of computerized programs appropriate for teaching mathematics at this level.

EDUC 3083 - Social Studies Curriculum, Teaching and Assessment in The Primary Grades (K-3) (2)

Analysis and discussion of the social sciences curriculum with emphasis on the mastery, interpretation and understanding of curricular content in the primary grades. Includes needs assessment and the planning, implementation, evaluation and assessment of the teaching learning process taking into account individual differences. Emphasis on the standards for the social studies program of the Puerto Rico Department of Education. Critical analysis of computerized programs appropriate for teaching social studies at this level.

EDUC 3084 - Social Studies Curriculum, Teaching and Assessment in The Primary Grades (4-6) (3)

Analysis and discussion of the social sciences curriculum with emphasis on the mastery, interpretation and understanding of the curricular content at the elementary level. Includes needs assessment and the planning, implementation, evaluation and assessment of the teaching learning process taking into account individual differences. Emphasis on the standards for the social studies program of the Puerto Rico Department of Education. Critical analysis of computerized programs appropriate for teaching social studies at this level.

EDUC 3090 - Children's Literature (3)

Evaluative and critical study of the literary forms and content for children from the most ancient folkloric forms through modern forms. Critical selection of a representative literary anthology for each teaching level in the Puerto Rican and universal environments. Problems, creative projects and laboratory, including the production of a creative literary work, reading, reports, practical observations, discussion and demonstrations of the effective use of children's literature from a non-discriminatory perspective.

EDUC 3110 - Diagnosis and Correction of Deficiencies in Oral and Written Communication of Secondary Level Students (3)

The deficiencies in oral and written communication of secondary level students with emphasis on methods of diagnosing and correcting them. Tests and techniques available to correct these deficiencies.

Prerequisite: EDUC 2031.

EDUC 3126 - Psycho-Philosophical Influences in Curriculum Models for Early Childhood Education (4)

Historical background of preschool education. The principal psycho-philosophical trends and their influence in curricular models at the preschool level. The constructive, behavioral and maturation theories and their educational implications. Includes the analysis and comparison of the principal models and/or educational programs for early childhood (Head Start, Montesstori, High Scope, Distar and Bank Street, among others) based on the relationship of the variables they have in common. Emphasis on the design of a curriculum guide for the preschool level based on the principles of the appropriate practices for the development and planning of teaching.

EDUC 3130 - Fine Arts in The Educational Process (3)

Teaching fundamentals in the visual arts, drama and music. Use of painting, modeling, simple puppet construction and mobile and stationary art to stimulate artistic creativity in children. Auditory, rhythmic and instrumental experience of a creative nature. Songs, simple games and organization of arrangements for orchestras and drama.

EDUC 3140 - Language and Reading (3)

Discussion of the nature of language, its formation and development, and its importance in the concept of reading. Analysis of the factors affecting the development of language and the concepts related to the ability to read. Includes planning, strategies and techniques for the development of language and reading skills.

Prerequisite: EDUC 2031.

EDUC 3150 - The Kindergarten in The School Program (3)

Global vision of preschool age children: the suggested curriculum for their personal and academic preparation and for mastery of the necessary skills that will promote self-management and satisfy their needs. Lectures, discussions, preparation of materials and observation of classes at the early childhood level. Study of the most important works in this field.

Prerequisite: EDUC 2031.

EDUC 3170 - Parents as Educators (3)

Analysis and study of the means and/or programs to achieve active parent participation in the educational process of the child. Techniques for promoting effective relations between family, school and community. Discussion of the practices and/or styles of rearing favorable to complete development during childhood. Program designs for educating parents as models, leaders and participants in the complete development of their children. Focus on the traditional and nontraditional structure of the family in the Puerto Rican and universal contexts.

EDUC 3185 - English Curriculum, Teaching and Assessment at The Elementary Level (K-3) (2)

Analysis and discussion of the English curriculum with emphasis on mastery, interpretation and understanding of curricular content in the primary grades. Includes needs assessment and the planning, implementation, evaluation and assessment of the teaching learning process taking into account individual differences. Emphasis on the standards

of the English Program of the Puerto Rico Department of Education. Critical analysis of computerized programs appropriate for the teaching of English at this level.

EDUC 3186 - English Curriculum, Teaching and Assessment at The Elementary Level (4-6) (3)

Analysis and discussion of the English curriculum with emphasis on mastery, interpretation and understanding of curricular content at the elementary level. Includes needs assessment and the planning, implementation, evaluation and assessment of the teaching learning process taking into account individual differences. Emphasis on the standards of the English Program of the Puerto Rico Department of Education. Critical analysis of computerized programs appropriate for the teaching of English at this level.

EDUC 3187 - English Curriculum, Teaching and Assessment at The Elementary Level (K-6) (4)

Application of teaching-learning theories and instructional models in the process of planning and developing educational activities. Diagnosis of needs, formulation of objectives, selection of content and planning of teaching units in the teaching of English as a Second Language and elaboration of materials. Application of assessment instruments and techniques in English. The teaching of reading-writing as a cognitive process.

EDUC 3188 - English Curriculum, Teaching and Assessment at The Secondary Level (4)

Application of teaching-learning theories and instructional models in the process of planning and developing educational activities. Diagnosis of needs, formulation of objectives, selection of content and planning of teaching units in the teaching of English as a Second Language and elaboration of materials. Application of assessment instruments and techniques in English. The teaching of reading-writing as a cognitive process.

EDUC 3190 - Language Arts in Early Childhood (3)

Teacher training to develop and direct activities that will help the child in the developmental stage of attitudes and skills for a better management of language. Discussion of the appropriate techniques to enrich the child's vocabulary and to correct speech defects. Techniques learned in previous courses will be used.

Prerequisite: EDUC 2875.

EDUC 3200 - Integration ofthe Computer in The Methodology and Assessment of Learning (3)

Analysis of the teaching methodology, theories of learning and the current educational paradigms and their application to the processes of planning, development and assessment of learning. Includes the development and effective administration of the propitious environment for learning incorporating the use of the computer and practice in the use of computerized applications that help expand the processes of teaching and assessment of learning. Analysis of research and projects dealing with the integration of the computer in the teaching and learning processes. Emphasis will be given to the coordination of the processes of teaching, learning and assessment with the use of the computer, according to the established professional standards.

EDUC 3232 - Language Arts Curriculum, Teaching and Assessment at the Elementary Level (4-6) (3)

Analysis and discussion of the language arts curriculum with emphasis on mastery, interpretation and understanding of curricular content at the elementary level. Includes needs assessment and the planning, implementation, evaluation and assessment of the teaching learning process taking into account individual differences. Emphasis on the standards of the Spanish Program of the Puerto Rico Department of Education. Critical analysis of computerized programs appropriate for the teaching of language arts at this level.

EDUC 3235 - Reading and Writing in the Primary Grades (3)

Study and analysis of different stages in the development of reading and writing. Discussion and application of different techniques, methods and strategies for the teaching of reading and writing. Design of an environment that promotes the development and learning of reading and writing skills in the home and at school. Use of the computer in the process of teaching reading and writing. Evaluation and assessment of reading and writing skills. Development of favorable habits and attitudes towards reading and writing. Emphasis on the standards of the Spanish Program of the Puerto Rico Department of Education.

EDUC 3260 - Organization and Administration of Childhood Services (3)

Planning, administration and evaluation of programs and services for the child. Discussion of the rules that govern the operation of different types of public, private or individually owned centers. Review of the roles and responsibilities of the board of directors, the administration, the teacher and other employees. Emphasis on budgetary management and personnel supervision and evaluation. Includes the planning of physical space inside and outside the classroom, as well as the criteria for the

selection and purchase of materials and equipment. Discussion of the policies of the centers as they relate to the operating norms manual.

EDUC 3265 - Natural Sciences Curriculum, Teaching and Assessment in the Primary Grades (K-3) (2)

Analysis and discussion of the natural sciences curriculum with emphasis on the mastery, interpretation and understanding of curricular content in the primary grades. Includes needs assessment and the planning, implementation, evaluation and assessment of the teaching learning process taking into account individual differences. Emphasis on the standards for the natural sciences program of the Puerto Rico Department of Education. Critical analysis of computerized programs appropriate for teaching natural sciences at this level.

EDUC 3266 - Natural Sciences Curriculum, Teaching and Assessment in the Primary Grades (4-6) (3)

Analysis and discussion of the natural sciences curriculum with emphasis on the mastery, interpretation and understanding of curricular content at the elementary level. Includes needs assessment and the planning, implementation, evaluation and assessment of the teaching learning process taking into account individual differences. Emphasis on the standards for the natural sciences program of the Puerto Rico Department of Education. Critical analysis of computerized programs appropriate for teaching natural sciences at this level.

EDUC 3270 - Educational Diagnosis, Evaluation and Assessment for Exceptional Students (3)

Study, administration, and interpretation of formal and informal assessment instruments used to collect data related to the functioning of exceptional students at various educational levels. Implications of the evaluation process for the diagnosis, placement and preparation of the student's Individualized Educational Program (IEP). The use of alternate evaluation models and "assessment" is required.

EDUC 3290 - Management of Student Behavior in the Classroom (3)

Analysis of theories and principles related to conduct management in the classroom. Application and practice of intervention and prevention strategies, methods and techniques that can be used by the teacher at various educational levels. The importance of collaboration and the consultation process with teachers, parents, and other staff will be discussed.

EDUC 3300 - Adaptive Living Skills for The Handicapped (3)

Emotional and social problems, resources and services for persons with disabilities. Legal rights, life style, social organizations, interpersonal relations, community services and the use of leisure time. Includes basic home economics skills for persons with disabilities.

Prerequisite: EDUC 2031.

EDUC 3400 - The Deaf and Hard of Hearing Child (3)

Physio-anatomical and acoustic bases of speech reproduction; interrelationship of speech and hearing.

Prerequisite: EDUC 2031.

EDUC 3420 - Curricular Content, Diagnosis and Treatment of Learning Problems in Mathematics (3)

Analysis of curricular content, methods and techniques for teaching mathematics to exceptional students at the different educational levels. Application of evaluation, measurement and assessment instruments for identifying problems in this area. Planning, selection and design of materials and use of technology in teaching.

EDUC 3440 - Curricular Content, Diagnosis and Treatment of Literacy Problems (3)

Analysis of the curricular content of reading and writing. Applications of teaching methods and techniques to exceptional students who present deficiencies in the area of literacy. Use of evaluation, measurement and "assessment" instruments to identify the various problems presented. Planning, selection and design of materials and use of technology in teaching at different educational levels.

Prerequisite: EDUC 314.

EDUC 3460 - Design and Development of Curriculum and Materials for Disabled Students (3)

Analysis of basic curricular principles of special education and their application to Puerto Rico. Evaluation of strategies for curricular adaptation for students with disabilities. Includes the knowledge of the appropriate teaching practices and the factors that promote education in natural and inclusive environments. Emphasis on the integration of knowledge, critical thought and the solution of problems within the curricular content. Students will create and adapt curricular material and the use of technology to meet the individual and developmental needs of students with disabilities in small groups, as well as in large groups.

EDUC 3464 - Development of Programs and Services for Children with Disabilities and their Families (3)

Service program models available in Puerto Rico for children with disabilities and their families. Emphasis on the integration of services among governmental and private agencies. Includes visits to observe programs that offer direct services to infants and preschool children with disabilities. Includes the preparation of a proposal for the development of a service program for infants and preschool children with disabilities.

EDUC 3465 - Seminar: Students with Disabilities and their Families (3)

Evaluation of the needs of students with disabilities and their families with emphasis on the transdisciplinary model. Development of the skills necessary to work with families that have students with disabilities. Study of the models of services programs available in Puerto Rico for students with disabilities and their families. Includes the study of the current laws and their educational implications. Requires 10 hours of supervised experience.

EDUC 3467 - Techniques and Assessment Instruments for Students with Disabilities (3)

Analysis of technical and instruments used to evaluate the development of infants and of pre-school children until adults who have disabilities. Students will have the opportunity to analyze existing instruments, and the construction of new instruments and have the experience of assessing a student from 0 to 21 years of age.

EDUC 3470 - Technological Assistance, Curriculum and Materials for Teaching Exceptional Students (3)

Application of assistive technology in teaching exceptional students. Understanding of the curriculum, the development and adaptation of materials, and the use of equipment and technological and instructional programs that can be used in the teaching-learning process at various educational levels. The importance of the alternate assessment process, collaboration, training, and technical assistance for teachers, parents, and other staff will be discussed.

EDUC 3515 - Basic Fundamentals of Sign Language (3)

Development of the skills necessary for teaching sign language to students with communication disorders.

EDUC 3563 - Methods and Techniques in Office Systems Administration (3)

Application of theories and models of the teaching and learning processes in the planning, development and assessment in the field of Office Systems Administration. Emphasis on needs assessment, formulation of educational objectives and the application of technology.

Prerequisite: EDUC 2031 and have approved the 2000 and 3000 level courses of the Office Systems Administration program.

EDUC 3564 - Methods and Techniques in Teaching Social Studies (3)

Application of the theories and models of teaching and learning processes in the planning, developing, and assessing of learning. Selection and preparation of materials for teaching social studies. Emphasis on the diagnosis of needs, formulation of educational goals, and application of technology for teaching the discipline.

Prerequisite: EDUC 3013.

EDUC 3565 - Methods and Techniques for Teaching History (3)

Application of the theories and models of teaching and learning processes in the planning, developing, and assessing of learning. Selection and preparation of materials for teaching history. Emphasis on the diagnosis of needs, formulation of educational goals, and application of technology for teaching the discipline.

Prerequisite: EDUC 3013.

EDUC 3566 - Methods and Techniques for Teaching Chemistry (3)

Application of the theories and models of teaching and learning processes in the planning, developing, and assessing of learning. Selection and preparation of materials for teaching chemistry. Emphasis on the diagnosis of needs, formulation of educational goals, and application of technology for teaching the discipline.

Prerequisite: EDUC 3013.

EDUC 3570 - Strategies, Methods and Techniques for Teaching Students with Functional Diversity (3)

Analysis of individualized educational programs, teaching strategies, methods and techniques. Includes experience in educational environments where students with functional diversity in the varied educational levels are cared for. Emphasis on daily planning accompanied by simulations.

EDUC 3581 - Methods of Teaching Reading and The Preparation of Materials for the deaf and Partially Deaf Student (3)

Intermediate level use of sign language. Application of individualized strategies and methods of teaching reading to the deaf and partially deaf student. Includes the design of materials and assistive technology equipment for the deaf and hard of hearing student.

Prerequisite: EDUC 2909.

EDUC 3585 - Language Development in the Deaf and Partially Deaf: Theory and Practice (3)

Use of advanced level sign language. Analysis of language stages between the ages of 0-5 years. Emphasis on the deficiencies in the evolutionary development of language and the aspects that configure the treatment and rehabilitation in the deaf and partially deaf child.

Prerequisite: EDUC 3581.

EDUC 3600 - Use of The Computer in Teaching (2)

Practice in the use of the microcomputer for data processing and as a resource in the teaching-learning process for problem solving and skills development in mathematics, language and data processing.

Prerequisite: EDUC 2031, GEIC 101.

EDUC 3610 - Group Processes in the Classroom (3)

Analysis of theories related to group interaction and dynamics in the classroom. Application to real classroom situations by means of simulations.

Prerequisite: EDUC 2031.

EDUC 3620 - Humanistic Focus in Teaching (3)

The humanistic approach in relation to learning and human development. The implications of these approaches to teaching, to study programs and to the student-teacher relation in the classroom.

Prerequisite: EDUC 2031.

EDUC 3630 - School and Community (3)

Human resources and public and private agencies that support the school in its educational function. Strategies to enlist the cooperation of community agencies in education.

Prerequisite: EDUC 2031.

EDUC 3640 - Adult Education (3)

The characteristics of the adult student population, their educational goals, and implications for teaching and programs of study. Analysis of teaching strategies for adults.

Prerequisite: EDUC 2031.

EDUC 3650 - Educational Research (3)

Practice in the use of different research techniques for decision-making in the educational process.

Prerequisite: EDUC 2031.

EDUC 3660 - Bilingual Education (3)

The characteristics of the bilingual student population and their implications for teaching. Teaching strategies and educational programs that help the bilingual student integrate satisfactorily into the school setting.

Prerequisite: EDUC 2031.

EDUC 3670 - Non-Traditional Programs (3)

The different educational alternatives to the regular instructional programs in public and private schools. The principles upon which their objectives, learning activities and educational programs are based. Among those studied are: The Non-Graded School, the Montessori School, Community Project and Educational Resource Center.

Prerequisite: EDUC 2031.

EDUC 3680 - Children with Physical and Health Disabilities (3)

The causes of health and physical disabilities (including disorders in the process of neurological development leading to physical disabilities). Incidence, procedures for service and adaptations required for the school environment.

Prerequisite: EDUC 2031.

EDUC 3690 - Education of Children with Visual Disabilities (3)

The causes of visual problems, incidence, characteristics and available educational services. Procedures for identification, evaluation and diagnosis and educational strategies for students with visual disabilities.

Prerequisite: EDUC 2031.

EDUC 3700 - Secondary Education for Youths with Disabilities (2)

Analysis of the variety of educational programs available at the secondary and university levels for youths with disabilities, including guidance and counseling services for the youths and their parents. Includes the prevocational and vocational programs available and the participation of these youths in the work world. Attention is given to rights guaranteed by law and to community service programs.

Prerequisite: EDUC 2031.

EDUC 3710 - Integration of Children with Disabilities in Regular Classrooms (3)

The role of the special education teacher in helping the regular education teacher prepare materials and curriculum modifications for children with disabilities in regular classrooms.

Prerequisite: EDUC 2031.

EDUC 3720 - Educational Innovations (3)

Analysis of changes and trends in modern education. Analysis of innovative projects that have been implemented in different educational settings.

Prerequisite: EDUC 2031.

EDUC 3750 - Educational Technology Laboratory (3)

Psychological and educational basis for the use of television, radio, movies, filmstrips, videotapes, tape recordings and other audiovisual materials in the teaching-learning situation. Approximately 20 hours will be devoted to laboratory experience.

Prerequisite: EDUC 2031.

EDUC 3860 - Instructional Theory, Methodology and Technological Resources in the Teaching for the Teaching at the Elementary Level (3)

Theories of instruction and their application in planning and developing learning activities in the teaching at the elementary level. Preparation of teaching materials using technological resources and stimulating creativity and innovation. Practice in the use of the microcomputer as a teaching resource. Selection and evaluation of commercially produced educational resources.

Prerequisite: EDUC 2031.

EDUC 3863 - Instructional Theory, Methodology and Technological Resources in the Teaching of Biology (3)

Application of the theories of instruction in planning and developing learning activities in the teaching of biology. Preparation of teaching materials using technological resources and stimulating creativity. Practice in the use of the microcomputer as a teaching resource. Includes the evaluation and selection of educational resources available on the market.

Prerequisite: EDUC 2031.

EDUC 3864 - Instructional Theory, Methodology and Technological Resources in the Teaching of Science in the Junior High School (3)

Theories of instruction and their application in planning and developing learning activities in the teaching of science in the junior high school. Preparation of teaching materials using technological resources and stimulating creativity and innovation. Practice in the use of the microcomputer as a teaching resource. Selection and evaluation of commercially produced educational resources.

Prerequisite: EDUC 2031.

EDUC 3865 - Instructional Theory, Methodology and Technological Resources in the Teaching of Spanish at the Secondary Level (3)

Theories of instruction and their application in planning and developing learning activities in the teaching of Spanish at the secondary level. Preparation of teaching materials using technological resources and stimulating creativity and innovation. Practice in the use of the microcomputer as a teaching resource. Selection and evaluation of commercially produced educational resources.

Prerequisite: EDUC 2031.

EDUC 3869 - Instructional Theory, Methodology and Technological Resources in the Teaching of Mathematics at the Secondary Level (3)

Theories of instruction and their application in planning and developing learning activities in the teaching of mathematics. Preparation of teaching materials using technological resources and stimulating creativity and innovation. Practice in the use of the microcomputer as a teaching resource. Selection and evaluation of commercially produced educational resources.

Prerequisite: EDUC 2031.

EDUC 3872 - Instructional Theory, Methodology and Technological Resources in Preschool Special Education (3)

Theories of instruction and their application to planning and developing learning experiences for special education preschoolers. Emphasis on the preparation of teaching materials using technological resources, creativity and innovation. Practice in the use of microcomputers as teaching tools. Selection and evaluation of commercially produced teaching materials.

Prerequisite: EDUC 2031.

EDUC 3873 - Instructional Theory, Methodology and Technological Resources in the Teaching of the Visual Arts (3)

Theories of instruction and their application in planning and developing learning activities in the teaching of the visual arts. Preparation of teaching materials using technological resources and stimulating creativity and innovation. Practice in the use of the microcomputer as a teaching resource. Selection and evaluation of commercially produced educational resources.

Prerequisite: EDUC 2031.

EDUC 3875 - Educational Theory, Methodology and Technological Resources in the Teaching of Physical Education at the Secondary Level 7-12 (3)

Educational theories, selection of materials, teaching styles and strategies as they apply to the planning, organization, motivation and management of the discipline. Practice in the use of technological equipment as a teaching resource and in the selection and application of educational materials during the teaching learning process. Experience of this process in the discipline is required.

EDUC 3876 - Instructional Theory, Methodology and Technological Resources in the Teaching of Music (3)

Theories of instruction and their application in planning and developing learning activities in the teaching of music. Preparation of teaching materials using technological resources and stimulating creativity and innovation. Practice in the use of the microcomputer as a teaching resource. Selection and evaluation of commercially produced educational resources.

Prerequisite: EDUC 2031.

EDUC 3877 - Instructional Theory, Methodology and Technological Resources in Special Education (3)

Theories of instruction and their application in planning

and developing learning activities in special education. Preparation of teaching materials using technological resources and stimulating creativity and innovation. Practice in the use of the microcomputer as a teaching resource. Selection and evaluation of commercially produced educational resources.

Prerequisite: EDUC 2031.

EDUC 3878 - Educational Theory, Methodology and Technological Resources in the Teaching of Physical Education at the Elementary Level (3)

Educational theories, selection of materials, teaching styles and strategies as they apply to the planning, organization, motivation and management of the discipline. Practice in the use of technological equipment as a teaching resource and in the selection and application of educational materials during the teaching learning process. Experience of this process in the discipline is required.

EDUC 3885 - Educational Theories and Technological Resources for the Teaching of Adapted Physical Education (3)

Instructional theories, selection of materials, teaching styles and strategies as they apply to the planning, organization, motivation and management of the discipline. Practice in the use of technological equipment as a teaching resource and in the selection and application of educational materials during the teaching learning process. Experience of this process in the discipline is required.

EDUC 3886 - Educational Theory, Methodology, and Technological Resources in Teaching School Health (K-12) (3)

Educational theories, models, teaching styles and strategies of education as they apply to the planning of school health. Discussion of the models most used in the design and development of the curriculum of the discipline. Practice in the use of technological equipment as resources that assist the educational process. Selection and preparation of didactic materials for teaching health at the K-12 levels.

Prerequisite: EDUC 2032.

EDUC 4000 - Managing the Conduct of Students with Autism (3)

Analysis of the categories of behavior problems of the student with autism. Evaluation of intervention strategies for the management of students with autism. Includes techniques and preparation of behavior modification plans.

EDUC 4009 - Technological Assistance for Teaching Children and Young People with Mild Disabilities (3)

Application of technology as an educational means for teaching students with mild disabilities. Operation of technological equipment and programs of an educational nature to facilitate the teaching-learning process for this population.

EDUC 4011 - Evaluation and Assessment (3)

Theories, techniques and means used by teachers for evaluation and assessment. Analysis of these techniques by comparing the subject content with the instrument used. Preparation, administration, correction and interpretation of tests and other evaluation and assessment techniques. Emphasis on the use of results as a means to improve the teaching- learning process.

Prerequisite: EDUC 2032.

EDUC 4012 - Classroom Research (2)

Introduction to research that can be carried out by the teacher in the classroom using applied quantitative and qualitative methods. Study and analysis of research carried out by teachers in the classroom.

EDUC 4013 - Clinical Experiences in the Educational Scenario II (4)

Clinical experiences as a student-teacher under the direct supervision of a cooperating teacher in the classroom and a university supervisor. The student-teacher has the responsibility to plan and offer as a minimum one period of class daily during the school semester. If the educational scenario permits it, at the elementary level the student can gradually teach two subjects in one grade or a subject in two grades, and at the secondary level it must be in the student's discipline with two different groups or grades. Requires a minimum of three (3) hours daily in the educational scenario and a minimum grade of B in the course.

Prerequisite: Have approved the Core and Major Prerequisites, except for EDUC 4551 and 4552, 2) have a minimum general point average of 3.00, 3) have a minimun point average of 3.00 in the Major, and 4) have the authorization of the Coordinator or Supervisor of Clinical Experiences.

EDUC 4020 - Philosophy of Education (3)

Critical analysis of the philosophical development of teaching and the effect these developments have had on educational policies and practices. One of the principal objectives of the course consists in helping students develop their own educational philosophy.

Prerequisite: EDUC 2031.

EDUC 4025 - Evaluation Methods, Diagnosis and Assessment of the Deaf and Partially Deaf Student (3)

Examine the formal instruments used by specialists to diagnose hearing problems. Interpretation of audiological evaluations for the development of the assessment in the learning of the deaf and partially deaf. It includes the preparation and interpretation of informal tests and preparation of the Individualized Educational Program (PEI).

EDUC 4030 - Environmental Health and Ecology (3)

Analysis of activities that cause contamination of the environment, their effects on the different ecosystems and the living beings with emphasis on human beings. Study of health conservation practices of human beings as well as of their natural surroundings. Emphasis on the process of problem solving related to environmental health. Problems are considered from the individual and communitarian point of view.

EDUC 4035 - Methodology of Teaching the Maternal Language and Literature (4)

Analysis of learning theories and their focus on teaching the maternal language, as well as the corresponding teaching techniques and strategies. Emphasis on the teaching of the production and understanding of texts, grammar and of the literary speech, in agreement with the more recent theories and focuses.

Prerequisite: SPAN 2542, 3020.

EDUC 4040 - Counseling in Health Aspects (3)

Analysis of inadequate behaviors and life styles, through the study of situations in which habits and customs are perceived that put integral health at risk. Development of the professional competencies necessary for recognizing risk behaviors and for planning courses of action that facilitate reconciliation and adoption of healthful practices and life styles from birth to old age.

EDUC 4050 - Curriculum Design (2)

The principles for the design of educational courses and programs. The relationship between curriculum and instruction. Experiences are provided for developing skills in the design, selection and modification of teaching units, courses and programs. In addition, the criteria for the selection of texts and educational materials are studied.

Prerequisite: EDUC 3013, 4011.

EDUC 4090 - Teaching the Culturally Deprived (3)

The influence exerted by a culturally deprived environment on the cognitive aspects of learning, social functions and the self-esteem of the child. Analysis of teaching methods, techniques and educational materials.

Prerequisite: EDUC 2031.

EDUC 4100 - Sociology of Education (3)

The sociological factors on which education is based and their effect on education. Emphasis on social problems confronting schools and society.

Prerequisite: EDUC 2031.

EDUC 4110 - Children's Play as a Learning Process (3)

The theory of play in relation to the total development and educational process of the young child. The planning of play activities within and outside the classroom giving attention to the cognitive, soci-emotional and kinesthetic aspects. Movement patterns characteristic of children for self-discovery. Critical analysis of commercial games emphasizing computerized games. Critical analysis of studies and pertinent scientific research. Emphasis on the role of the adult in children's games.

EDUC 4250 - Planning Student Activities in the Secondary School (3)

Problems, practices, controversies and current trends related to sponsoring, directing and supervising student activities in the intermediate and secondary school. Objectives and organization of student councils, homerooms, clubs, school publications, assemblies, literary and oratory contests, and other student activities are studied as integrating factors in the general program of instruction.

EDUC 4510 - Principles of Adult Student Education (3)

Discussion of concepts, theories, approaches, principles and trends in the education of adults and their implications in the adult teaching-learning process.

EDUC 4520 - Socio Cultural -Foundations of Adult Education (3)

Discussion of the principle socio cultural factors affecting the education of the adult student and their implications for the teaching-learning process.

EDUC 4522 - Integration of Professional Skills (1)

Integration of the pedagogical skills for the would-be teacher. Includes the analysis of teaching situations in agreement with the educational level. Requires that students spend additional time outside the school schedule to complete the course modules. Students must take and pass a final comprehensive examination with a minimum score determined by the University. The approval of this course is a Prerequisite for obtaining authorization to take the "Prueba de Competencias Fundamentales y Competencias de la Comunicación (PCMAS)". Grade: P/NP.

Prerequisite: Have approved the Core Courses, except the courses of Clinical Experiences in the Educational Scenario, and have the authorization of the department's chair. .

EDUC 4530 - Psychology of The Adult Learner (3)

Discussion and analysis of the principle theories of development, growth and learning of the adult and the implications of these for teaching adults.

EDUC 4540 - Adult Student Teaching Methods (3)

Application of proper methods, techniques, strategies and activities for teaching the adult student. Includes the use of the computer.

EDUC 4550 - Evaluation of Learning of the Adult Student (3)

Discussion and application of assessment techniques for the formative evaluation of adult student learning. Includes the use of the computer for simple statistical analyses.

EDUC 4551 - Integration of Basic Knowledge and Communication Skills (1)

Integration of basic knowledge and communication skills for the would-be teacher. Requires that students spend additional time outside the school schedule to complete the course modules. Students must take and pass a final comprehensive examination with a minimum score determined by the University. The approval of this course is a Prerequisite for obtaining authorization to take the "Prueba de Competencias Fundamentales y Competencias de la Comunicación (PCMAS)". Grade: P/NP.

Prerequisite: GESP 2203; GEEN 1103 or 1203 or 2313; GEIC 1010; GEMA 1000 or 1002 or 1200; GEPE 3010 or 3020; GEHS 2010, 3020, 4020 and 4030; and GEST 2020 or 3030 and authorization of the department's chair.

EDUC 4552 - Integration of Professional Skills (1)

Integration of the pedagogical skills for the would-be teacher. Includes the analysis of teaching situations in agreement with the educational level. Requires that students spend additional time outside the school schedule to complete the course modules. Students must take and pass a final comprehensive examination with a minimum score determined by the University. Prerequisites: Have passed the Core Course Prerequisites of the major, except the courses of Clinical Experiences in the Educational Scenario, and have the authorization of the academic department. The approval of this course is a Prerequisite for obtaining authorization to take the "Prueba de Competencias Fundamentales y Competencias de la Comunicación (PCMAS)". Grade: P/NP.

ELEC - Electronic Engineering Technology

ELEC 1120 - Industrial Safety (3)

Study of the norms related to the Occupational Safety and Health Act (OSHA) in work areas: electrical risks, risks of falls, mechanical platforms, elevators, dangerous materials, protective equipment for the personnel, protection against fires, spaces, air equipment and compressed gas, work with machines and protectors of them, electrical tools manuals and, violence in the work place and first aid.

ELEC 1170 - Electronic Drawing Laboratory (1)

Computer Aided Schematic Diagram Design (CAD). Application of programs for simulation of electronic circuits. It requires 45 hours of laboratory.

ELEC 2121 - Digital Circuits Laboratory I (1)

Analysis and carrying out of laboratory practices with basic gates. Determine experimentally the different simplification methods. Development of skills with the measuring instruments used in digital circuits. Interpretation of diagrams to implement circuits with basic and different IC gates, such as adding machines, comparators, multiplexer and demultiplexer. Experimental verification of the concepts and foundations of the rules of Boole and DeMorgan laws. Requires 45 hours of lab.

Prerequisite: GEMA 1200. Corequisite: ELEC 2131.

ELEC 2131 - Digital Circuits I (3)

Analysis of combinational and sequential digital circuits from mathematical logic to physical implementation. Identification of truth tables for the different gates, methods for analysis of logic circuits such as Boolean Algebra, Karnaugh Maps, Quine Method, and others. Description of the electronic properties and characteristics of the family of integrated logic circuits in common use, with emphasis on TTL and CMOS.

Prerequisite: GEMA 1200.

ELEC 2140 - Electrical Laws and Codes (3)

Interpretation of the National Electrical Code and the rules that apply to electrical systems. Emphasis on topics related to typical electrical systems in businesses, residences and industries.

Prerequisite: ELEC 1120.

ELEC 2170 - Electronic Drawing (3)

Introduction to computer aided drawing (CAD). Line types. Projections and dimensions. Symbolism used in electronics. Units, nomenclature and codes. Block diagrams. Schematic diagrams. Introduction to programs for simulation of electronic circuits. Introduction to computer aided simulation to instrumentation. Requires 45 hours of lecture-lab.

ELEC 2331 - Electrical Circuits Laboratory I (1)

Analysis and carrying out of laboratory practices on fundamental concepts of electricity and passive devices submitted to direct current. Use of energy sources and instruments to measure electrical variables. Interpretation of diagrams to implement electrical circuits. Experimental verification of the laws and theorems that apply to the solution of the CD electrical circuits. Observation of the transient behavior of the condensers and the coils in CD. Requires 45 hours of lab.

Prerequisite: GEMA 1200. Corequisite: ELEC 2341.

ELEC 2332 - Electrical Circuits Laboratory II (1)

Analysis and carrying out of practical on signals of AC voltage. Development of skills in the use of oscilloscope and signal generators. Study of the behavior in frequency of components R, L and C. Interpretation of diagrams to implement electrical circuits. Experimental verification of the laws that apply to the solution of the electrical circuits in CA. Analysis of resonant circuits, passive filters, transformers and three-phase systems. Requires 45 hours of lab.

Prerequisite: ELEC 2331, 2341. Corequisite: ELEC 2342.

ELEC 2341 - Electric Circuits I (3)

Analysis of the fundamental concepts of electricity and passive devices submitted to direct flow. Evaluation of circuit elements and variables such as inductance, capacitance and the response of first-order circuits: RL, RC and RLC. Application of circuit analysis techniques.

Prerequisite: GEMA 1200.

ELEC 2342 - Electrical Circuits II (3)

Electric Circuit analysis under Alternating Current (AC) conditions. Describe impedance and phasor concepts. Compare series and parallel circuits under AC conditions and compare methods of analysis in series-parallel circuits. Calculate power and analysis of balanced three phase circuits and transformers. Compare series and parallel resonant circuits.

Prerequisite: ELEC 2341. Corequisite: MATH 1500.

ELEC 2410 - Lighting (3)

Study of the basic principles of selecting and installing artificial light. Discussion of the different factors that affect lighting and the ways to produce artificial light.

Prerequisite: ELEC 2341.

ELEC 2430 - Reading Electrical Loads and Plans (3)

Interpretation of electrical plans for power, lighting system, itineraries and details as they apply to industrial facilities, businesses, residential facilities and others. Study of electrical energy in accord with the National Electrical Code guidelines.

Prerequisite: ELEC 2341.

ELEC 2471 - Electronic Circuits Laboratory I (1)

Analysis and conduct of laboratory practices on fundamental concepts of electronics and solid state devices. Development of skills with the measuring instruments used in circuits with diodes and transistors BJT. Interpretation of diagrams to implement electronic circuits. Experimental verification of the concepts and foundations that apply to the solution of electronic circuits. Requires 45 hours of lab.

Prerequisite: ELEC 2331. Corequisite: ELEC 2481.

ELEC 2472 - Electronic Circuits Laboratory II (1)

Analysis and conduct of laboratory practices on fundamental concepts of electronics and solid state devices. Development of skills with the measuring

instruments used in circuits with transistors FET and integrated circuits. Interpretation of diagrams to implement electronic circuits. Experimental verification of the concepts and foundations that apply to the solution of electronic circuits. Requires 45 hours of lab.

Prerequisite: ELEC 2332, 2471. Corequisite: ELEC 2482.

ELEC 2481 - Electronic Circuits I (3)

Analysis on fundamental concepts of electronics and solid state devices, including: diodes, semiconductors, bipolar transistors, polarization and stability of basic transistorized circuits. Design of amplifiers; rectifiers and filters.

Prerequisite: ELEC 2341.

ELEC 2482 - Electronic Circuits II (3)

Analysis of small and large signal circuits, and field effect transistors (FET). Design of low, high and medium frequency amplifiers. Interpretation of the linear integrated circuits, feedback amplifiers and filters.

Prerequisite: ELEC 2481.

ELEC 2520 - Electrical Machines and Transformers (3)

Study of the elementary concepts of magnetic circuits and of direct current (DC) and alternate current (AC) engines. Discussion of rotating engines and transformers.

Prerequisite: ELEC 2341.

ELEC 2530 - Electrical Controls (3)

Study of the operation and application of the following basic devices in typical facilities: switches, relays, starter motors and Variable Frequency Drivers (VFD).

Prerequisite: ELEC 2520.

ELEC 2540 - Logic Controllers for Power (3)

Study of electromechanical relays, step diagrams, basic concepts, programming and application of logic controllers. Requires 30 hours of lecture and 45 hours of lab.

Prerequisite: ELEC 2530.

ELEC 2670 - Solar Energy (3)

Analysis of the characteristics of solar cells. Study of the general concepts on photovoltaic systems and the components of a solar system for energy generation. Development and applications of photovoltaic systems. Evaluation of the installation site. Analysis of shade. Electrical and mechanical Integration. Discussion of

regulations for the installation of a solar system. It requires 30 hours of conference and 30 hours of closed laboratory.

Prerequisite: ELEC 2342, 2481.

ELEC 2910 - Practice in Industry (4)

Practical experience in industry or government agency where the student will have the opportunity to use the knowledge and skills acquired to solve related problems to electronics. A written report based on this practical experience must be turned in by the student upob completing the academi term. A faculty member will supervise the student's practical experience. The student must complete at least 160 hours of practical experience.

ELEC 2915 - Professional Practice (3)

Practical experience in industry, private companies or government agencies under the direct supervision of a coordinator of the practice scenario and a member of the faculty, where the student will apply the acquired knowledge and skills to solve problems related to electrical power. Requires 120 hours of practical experience.

Prerequisite: Have approved a minimum of 25 credits in the major and the authorization of the program's director or coordinator.

ELEC 397_ - Special Topics (3)

Study of current issues in the field of electronics. Requires 45 hours of conference.

Prerequisite: ELEC 3182 and authorization of the department's chair.

ELEC 3131 - Logic Circuits Laboratory II (1)

Analysis and conduct of laboratory practices on fundamental concepts of the digital electronics. Development of skills with the measuring instruments used in digital circuits. Interpretation of diagrams to implement circuits with flip flop, counter, shift register, memories, A/D and D/A. Experimental verification of the concepts and foundations that apply to the solution of the digital circuits. Requires 45 hours of lab.

Prerequisite: ELEC 2121, 2131. Corequisite: ELEC 3132.

ELEC 3132 - Digital Circuits II (3)

Analysis of the different families of bipolar and single-pole logic circuits. Description of large scale integration circuits and their application. Identification of the logical arrangements of programmable logic, memories, analog-digital and digital-analog conversion Implementation of

integrated digital circuits of specific application (ASIC/ASDIC). It requires 30 hours of conference and 30 hours of closed laboratory.

Prerequisite: ELEC 2131.

ELEC 3370 - Programmable Logic Controllers (3)

Discussion of the Programmable Logic Controllers (PLC). Description of the CPU. Identification of the functionality of the input/output system (Modules of I/O) and the organization of memory. Programming of control instructions programming, and instructions for data manipulation, for timers, for counters, for sequencers, and for mathematical calculations. Development of programs from Ladder diagrams. It requires 30 hours of conference and 30 hours of closed laboratory.

Prerequisite: ELEC 2131, 2341.

ELEC 3431 - Electrical Systems (3)

Application of the principles of electrical security. Identification of electrical equipment and its properties. Analysis of transformers, power conditioning, and induction motors. Calculation of power of single-phase and tri-phase circuits. Study of motor control devices, programmable logic controllers; as well as input and output devices of PLC's. Introduction to the use of communications in the control of power systems. It requires 30 hours of conference and 30 hours of closed laboratory.

Prerequisite: ELEC 2342.

ELEC 3470 - Industrial Electronics Laboratory (1)

Theoretical and practical study of the electronic circuits, the procedures and processes used in industry. Foundations of the theory and control loops, applications of integrated circuits, detection elements for measuring flow, temperature and scrolling. Use and programming of programmable controllers and application of operational amplifiers. Requires 45 hours of lab.

Prerequisite: ELEC 2342, 3171. Corequisite: ELEC 3480.

ELEC 3480 - Industrial Electronics (3)

Analysis of the electromechanical relays, transistors and logical gates in the construction of logical circuits for industrial use. Description of the operation theory and applications of the most common thyristors, the basic principles of operational amplifiers and the invertors. Study of the basic elements of motor speed control and of the programmable logic controllers (PLC).

Prerequisite: ELEC 2342, 3181.

ELEC 3660 - Solar Energy Laboratory (1)

Analysis and conduct of laboratory practices with the devices that form a photovoltaic system (PV). Analysis of the behavior of PV cells under different levels of solar irradiation. Analysis of shade in the installation location. Operation of batteries, investors and load controllers. Interconnection of the elements of a PV system. Study of the regulations and the connection codes, of the security norms and protection devices. Interconnection with the network supplying electrical energy. Requires 45 hours of lab.

Prerequisite: ELEC 2332, 3171. Corequisite: ELEC 3670.

ELEC 3670 - Solar Energy (3)

Analysis of the characteristics of solar cells. Study of the general concepts on photovoltaic systems and the components of a solar system for energy generation. Development and applications of photovoltaic systems. Evaluation of the installation site. Analysis of shade. Electrical and mechanical Integration. Discussion of regulations for the installation of a solar system.

Prerequisite: ELEC 2342, 3181.

ELEC 4020 - Systems with Microcontrollers (3)

Analysis of the architecture and organization of microcontrollers. Programming of microcontroller interconnections to peripheral devices and input and output ports. Implementation of systems based on microcontrollers. It requires 45 hours of conference-laboratory.

Prerequisite: ELEC 3182 and ENGR 2130.

ELEC 4210 - Communications Laboratory (1)

Study of low pass, high pass and band pass filter circuits. Construction of circuits to modulate amplitude, oscillating and frequency multipliers. Differentiation between frequency mixers, diode detectors and others. Requires 45 hours of lab.

Prerequisite: ELEC 3172. Corequisite: ELEC 4220.

ELEC 4220 - Communications (3)

Discussion of the principles of communication, modulation, transmission and reception of AM, FM and SSB signals. Design of communication systems diagrams. Analysis of resonant circuits and radio frequency (RF) circuits. Evaluation of noise and its effect on communications.

Prerequisite: ELEC 2482.

ELEC 4370 - Instrumentation and Control Systems Laboratory (1)

Construction and analysis of circuits using basic control elements. Verification of the theoretical concepts of control systems by means of practical circuits. Development of instrumentation circuits using operational amplifiers. Requires 45 hours of lab.

Prerequisite: ELEC 3172. Corequisite: ELEC 4380.

ELEC 4380 - Instrumentation and Control Systems (3)

Introduction to the basic concepts of a control system: sensors and their application, feedback theory and transition functions. Comparison of proportional control: derivational and integral. Evaluation of the transducers used in measure and control electronic systems. Analysis of the mechanical, electromechanical and electronic components of the basic control system.

Prerequisite: ELEC 2482, 3480.

ELEC 4470 - Robotics and Automation (3)

Discussion of the foundations of industrial robotics, manipulators, actuators, endeffectors and controller. Classification of industrial robots and the technology of external and internal sensors. Modeling and techniques of kinematic and dynamic control of industrial robots. Systems of computerized vision. Intelligent Robots, and robot languages. Applications of robots in industrial processes of manufacturing, sequential process control and automation of continuous and discreet processes. Development of programs for automation, CAD, CAM, CIM, simulators and introduction to concepts and techniques of automation. It requires 30 hours of conference and 30 hours of closed laboratory.

Prerequisite: ELEC 2481.

ELEC 4910 - Professional Practice (4)

Practical experience in the appropriate environment of an industrial or governmental organization to reinforce the applicability of acquired knowledge, and prepare the student for the world of work. Minimum of 160 hours is required.

Prerequisite: Authorization of the practice's supervisor instructor .

ELEC 4971 - Integration Project (3)

Integration of knowledge, skills, techniques and tools in the development of a project related to the field of electronics. Assessment of skills applied to problem solving.

Prerequisite: Be enrolled in the last academic term.

ELEN - Electrical Engineering

ELEN 3301 - Electric Circuits I (4)

Study of the voltage-current characteristics for passive elements of independent and dependant sources and the laws of Kirchhoff. Use of circuit analysis techniques: mesh currents, node voltage, source transformations, Thevenin and Norton theorems and superposition. Study of capacitors, inductors and mutual inductance. Analysis of the natural response and circuits step RC, RL and RLC. Introduction to alternate current sources and the effective value. Emphasis on mathematical analysis and corresponding designs. Analysis of circuits using the computer. Requires 45 hours of lecture and 30 hours of lab.

Corequisite: PHYS 3312.

ELEN 3302 - Electric Circuits II (4)

Analysis of circuits using fasors. Analysis of power. Use of the Laplace transform techniques to analyze linear circuits with and without initial conditions. Two port circuit characterization based on impedance, admittance and function parameters of transfer. Passive filter design. Analysis of circuits using the computer. Requires 45 hours of lecture and 30 hours of lab.

Prerequisite: ELEN 3301and MATH 3400.

ELEN 3311 - Electronics I (4)

Study of the semi conducting materials and their properties. Analysis and design of power supply. Analysis of bipolar circuits that contain diodes, bipolar transistors and field effect transistors. Analysis and considerations of simple and multiple stage amplifier design. Analysis of operational amplifiers. Design of electronic circuits using the computer. Requires 45 hours of lecture and 30 hours of lab.

Prerequisite: ELEN 3301.

ELEN 3312 - Electronics II (4)

Analysis of frequency response to amplifiers. Study of feedback effect on amplifiers. Design of amplifiers with feedback and of oscillators. Analysis and design of active filters. Study of digital logic circuits. Design of electronic circuits using the computer. Requires 45 hours of lecture and 30 hours of lab.

Prerequisite: ELEN 3311, 3302.

ELEN 3320 - Logic Circuits (4)

Study of Boolean algebra theorems and postulates. Simplification of logic gatesusing minimization techniques. Combinational circuits design including arithmetic circuits and regular structures, sequential circuit design including machines of finite state. Study of microprocessors functional blocks. Logic circuit design using the computer. Requires 45 hours of lecture and 30 hours of lab.

Corequisite: ELEN 3301.

ELEN 3360 - Applied Electromagnetics (4)

Study of the behavior of electric and magnetic fields and the interrelation between them under static and dynamic cases, according to Maxwell's laws. Analysis of the electrical and magnetic properties in materials. Analysis of the propagation of electromagnetic waves in transmission lines; and the propagation of electromagnetic waves in conductive and dielectric media with and without losses. It includes the study of the transmission, reflection and refraction of electromagnetic waves for normal and oblique incidence. Study of the antennas and their characteristics. Examination of the Friis equation for satellite communication systems and radars.

Prerequisite: ELEN 3302 and MATH 3250.

ELEN 3430 - Signals and Systems (3)

Study and classification of signals and systems. Analysis of systems in continuous or discrete time domain. Analysis of systems in the discreet time domain by means of the Z transform. Linear system analysis in continuous time by the Fourier series and transform. Systems analysis using the computer. Requires 45 hours of lecture-lab.

Prerequisite: ELEN 3302.

ELEN 4020 - Microcontrollers (3)

Study of the organization and architecture of microcontrollers, relations of time and handling of memory. Development of systems based on microcontroller and integrated systems. Interconnections of the microcontroller to peripheral devices, entrance and exit ports and their programming. Emphasis in the design of integrated systems. Requires 45 hours of lecture-lab.

Prerequisite: ELEN 3311, ELEN 3320 and ENGR 2130 or COEN 2210.

ELEN 4110 - Power Systems Analysis (3)

Analysis of power systems under steady-state conditions. Study of transmission lines and power transformers. Complex power flow analysis and their effects in the power factor. Fault analysis and system protection. Study of the operation of electrical machines and power distribution systems. Introduction to power quality and general design Prerequisites for an electric substation.

Prerequisite: ENGR 3365.

ELEN 4120 - Electrical Engineering Laboratory (1)

Development of basic electrical engineering laboratory skills and techniques. Emphasis in safety rules and use of measurement devices of electrical parameters. Development of different experiments with electric circuits under direct and alternate current sources and with transformers. Requires 45 hours of closed laboratory.

Prerequisite: ELEN 4110.

ELEN 4327 - Measurements and Instrumentation (4)

Study of the measurement systems characteristics and their applications. Analysis of data acquisition systems. Circuit design for preparation of analog and digital signals. Design of instrumentation systems using different types of sensors. Measurement systems design using the computer. Requires 45 hours of lecture and 30 hours of lab.

Prerequisite: ELEN 3312.

ELEN 4351 - Power Systems Analysis I (4)

Analysis of power systems in a stationary condition. Study and modeling of the transmission lines and three-phase power systems and their behavior in the stationary state. Analysis of the flow of complex power and its effects in the power factor. Study and modeling of the power transformer and its behavior in the stationary state. Requires 45 hours of lecture and 30 hours of lab.

Prerequisite: ELEN 3302.

ELEN 4352 - Power Systems Analysis II (4)

Calculation of the power flow in the electrical system networks. Analysis of symmetrical and asymmetric failures using sequence networks. Review of the economic operation and stability, and the protection systems of the power systems. Study of synchronous generator. Use of simulation tools to model the flow of power and faults in

the power systems. Requires 60 hours of lecture-lab.

Prerequisite: ELEN 4351.

ELEN 4353 - Electric Machines and Drives (4)

Study of the operation of Electric Drives and their use to control speed and position in different applications. Analysis of magnetic circuits applied to electrical machines. Study and analysis of single-phase and three-phase DC and AC machines. Requires 45 hours of lecture and 45 hours of lab.

Prerequisite: ELEN 4351.

ELEN 4375 - Electrical Systems Design for Buildings (3)

Electrical systems analysis and design for buildings, with emphasis on the use of the National Electrical Code in the design process. Study of the load characteristic, transformers, voltage drop calculations, and equipment and systems protection. Design of lighting systems for buildings. Design of computer-assisted electrical and lighting systems. Requires time in an open lab.

Prerequisite: ELEN 4351 or ELEN 4110.

ELEN 4376 - Industrial Power Systems Design (3)

Design of industrial systems of power with emphasis on the aspects of planning and protection, the system characteristics and its components and the installation systems. Analysis and design of computer-assisted power systems. Requires time in an open lab.

Prerequisite: ELEN 4353.

ELEN 4378 - Distributed Generation (3)

Analysis of the characteristics of the technology used as a source of distributed generation and its integration to the electrical power network. Analysis and design of computer-assisted systems. Requires time in an open laboratory.

Prerequisite: ELEN 4351.

ELEN 4410 - Digital Systems Design (4)

Design of logic circuits using integrated ciurcuit compoenents. Applications of combinational and sequential logic circuits. Analysis of interface systems between different families of analog-to-digital converters and vice versa. Design of logic circuits using computers. Requires 45 hours of lecture and 30 hours of lab.

Prerequisite: ELEN 3320 and ENGR 2130, or COEN

2210.

ELEN 4413 - Analog Filter Design (4)

Analysis of design techniques and applications of passive and active analog filters. Design of passive and active filters using Butterworth, Chebyshev and Ecliptic transfer functions. Implementation of passive and active filters. Performance of active and passive filters. Analog filter design using the computer. Requires 45 hours of lecture and 30 hours of lab.

Prerequisite: ELEN 3312.

ELEN 4414 - Electronic Design (4)

Analysis and design of the basic configurations of operational amplifiers, converters of voltage to current and current to voltage, instrumentation amplifier and active filters. Study of DC and AC limitations of an operational amplifier. Linear and non-linear circuit design using operational amplifiers such as signal generators of analog to digital and digital to analog converters. Electronic circuit design using the computer. Requires 45 hours of lecture and 30 hours of lab.

Prerequisite: ELEN 3312.

ELEN 4415 - Power Electronics (4)

Analysis of the general laws and the limitations in power electronic circuits, commutation characteristics, generic converters topologies and their operation principles, desirable commutation trajectory, and snubber circuits. Electronic power circuit design using the computer. Requires 45 hours of lecture and 45 hours of lab.

Prerequisite: ELEN 3312.

ELEN 4509 - Control Systems (4)

Definition and types of control systems. Analysis and design of control systems in continuous time, through their mathematical models. Study of the modern and conventional theory of control systems using state variables. Representation of systems by block diagrams and reograms. Study of the characteristics of control systems. Design using the geometric root locus, frequency response and applications. Systems design using the computer. Requires 45 hours of lecture and 30 hours of lab.

Prerequisite: ELEN 3312, 3420.

ELEN 4513 - Digital Control Systems (4)

Analysis and design of control systems in discrete time, digital control systems. Study of the Zeta (z) transform. Analysis of systems in discrete time in the Z plane. Analysis in the spatial state. Design of digital control systems using the computer. Requires 45 hours of lecture and 30 hours of lab.

Prerequisite: ELEN 4509.

ELEN 4514 - Robotics (4)

Analysis of the kinematics, dynamics and control of robotic manipulators. Design and programming of robotic manipulators. Robot applications, in industry, medicine and other areas. Requires 45 hours of lecture and 30 hours of lab.

Prerequisite: ELEN 4509.

ELEN 4516 - Computer Aided Control System Design (4)

Automated control system design using specialized programs. Study of the physical and mathematical system models. Controller design. Analysis by practical methods and aspects of systems design using the computer. Requires 45 hours of lecture and 30 hours of lab.

Prerequisite: ELEN 4509.

ELEN 4535 - Process Control (3)

Analysis, simulation and design of control processes using the computer. Study of the process models. Systems analysis and design using state variables. Applications of the control process. Requires 45 hours of lecture-lab.

Prerequisite: ELEN 4509.

ELEN 4537 - Neuronal Networks Applied to Control Systems (3)

Study of the foundations of neuronal networks and the learning processes. Analysis of perceptron networks of one and multiple layers. Study of the basic functions of neuronal networks. Applications of control systems using the computer.

Prerequisite: ELEN 4509.

ELEN 4538 - Automation (3)

Study of the technology, programming, theory and applications of industrial robots. Design of discrete process control systems by means of programmable logic controllers. Study and application of industrial sensors in the automation of discrete processes. Requires 45 hours of lecture-lab.

Prerequisite: ELEN 4509.

ELEN 4610 - Analog and Digital Communications (4)

Study of the representation of signals using the Fourier series and transform. Study of amplitude and angle type modulation. Analysis of bandwidth importance in a modulated signal. Study of noise, distortion and interference in communication systems. Explanation of the theorem of Nyquist and introduction to pulse type modulation. Introduction to digital communication. Communication systems design using the computer. Requires 45 hours of lecture and 30 hours of lab.

Prerequisite: ELEN 3430.

ELEN 4611 - Microwave and Radio Frequency Engineering I (4)

Study of the behavior of discrete, distributed and active elements in high frequencies. Characterization of transmission lines based on characteristic impedance, reflection coefficient, electrical length and stationary waves. Design of connecting networks using the Smith Chart. Analysis of microwave circuits using the two port circuit theory and flow charts. Design of narrow band microwave and amplifier filters. Implementation of microwave circuits using micro tapes and discrete elements. Design of radio frequency and microwave systems using the computer. Requires 45 hours of lecture and 30 hours of lab.

Prerequisite: ELEN 3312 and 3360.

ELEN 4612 - Microwave and Radio Frequency Engineering II (4)

Design of directional couplers, power splitters, low noise amplifiers, ample band amplifiers, power amplifiers, oscillators, resonators and mixers. Analysis of noise effect on microwave systems. Design and implementation of microwave circuits using techniques of computer aided design (CAD). Requires 45 hours of lecture and 30 hours of lab.

Prerequisite: ELEN 4611.

ELEN 4614 - Advanced Digital Communication (4)

Discussion of pulse code modulation (PCM) and Mary modulation. Analysis of modulation, demodulation and detection of baseband and bandpass signals. Analysis of the parameters that affect binary signals and of multiple levels such as the error probability, additive Gaussian noise, interference and distortion. Comparison of the Amplitude Shift-Keying, Frequency Shift-Keying, Phase shift-keying and Amplitude Phase Keying modulations. Analysis of the codification formats. Analysis of power in a system using Link Budget Analysis. Communication systems design using the computer. Requires 45 hours of lecture and 30 hours of lab.

Prerequisite: ELEN 4610.

ELEN 4618 - Wireless and Cellular Communication (4)

Integration of the fundamental concepts of wireless communication systems such as: personal communication systems (PCS), cellular, wireless networks for computerized systems, call processing, frequency reuse, losses in propagation, CDMA systems, fading reduction methods, techniques for error correction and multipath. Discussion of several access methods, such as: FDMA, TDMA and CDMA. Simulations of different modulation architectures using computer applications. Requires 45 hours of lecture and 30 hours of lab.

Prerequisite: ELEN 4610.

ELEN 4623 - Optical Communications (3)

Analysis of the advantages of the optical communication systems versus the electrical transmission of data, and of the parameters that affect the speed of data transmission. Study of the modes of propagation, light sources, light detection circuits, and types of optical fiber. Analysis of the modulation of light for data transmission in analog and digital form. Design of optical communication systems using the computer.

Prerequisite: ELEN 3360.

ELEN 4625 - Digital Signal Processing (3)

Analysis of continuous and discrete signals in time and frequency domain. Image, voice and arrangement processing and its implementation using software and hardware. Emphasis on the integration of the digital processing of signals concepts in a design environment. Digital signal processing systems design using the computer. Requires 45 hours of lecture-lab.

Prerequisite: ELEN 4610.

ELEN 4626 - Design of Antennas (3)

Study of the relation of electromagnetic energy with antennas. Analysis of the patterns of irradiation and distribution of current. Analysis of antenna efficiency in terms of irradiation pattern, beam width, directivity, polarization, effective area and power density. Design of antennas using the integrals of irradiation and auxiliary potential functions. Study of dipole, circular and bow

antenna, biconical antenna, log-periodic, horn antenna, reflecting antenna and micro strip antenna. Analysis of antennas behavior in the in the presence of ground plane and earth curvature. Design of antenna arrangements. Explanation of measurement techniques. Design of antenna systems using the computer. Requires 45 hours of lecture-lab.

Prerequisite: ELEN 3352, 4610.

ELEN 4627 - Data Communications Networks (3)

Study of the ISO reference model. Analysis of electrical interface, data transmission, error control, and data transmission protocols. Study of communication technologies including Local Area Networks, Broadband Area Networks, and packed switching. Study of the functioning of bridges, routers, switches, circuit switched networks, Asynchronous Transfer Mode (ATM), and virtual circuit. Design of networks. Data networks simulation using the computer. Requires 45 hours of lecture and 45 hours of lab.

Prerequisite: ELEN 4610.

ELEN 4810 - Electrical and Computers Engineering Project Design (3)

Major experience design in electrical or computer engineering in which the student will integrate the knowledge acquired in their study program. Development of multidisciplinary teamwork skills, in organization and in effective communication. Evaluation and implementation or simulation of a device, system or product as applicable.

Prerequisite: Be enrolled in the last term of classes and authorization of the department's chair.

ELEN 4915 - Electrical Engineering Practical Experience (3)

Supervised electrical engineering practical experience in the industry or government agency. A comprehensive report must be submitted at the end of the term based on the electrical engineering practical experience. A faculty member will supervise the practical experience of the student. The student must complete at least 160 hours of practical experience.

Prerequisite: Authorization from the supervisor professor.

ELEN 4921 - Undergraduate Research in Electrical Engineering I (3)

Development of a research project in the area of electrical engineering under the supervision of a faculty member. The student will dedicate a minimum of 135 hours of work in the development of this project.

Prerequisite: Authorization from the department's chair.

ELEN 4922 - Undergraduate Research in Electrical Engineering II (3)

Development or continuation of a research project in the area of ??electrical engineering under the supervision of a faculty member. The student will dedicate a minimum of 135 hours of work in the development of this project.

Prerequisite: ELEN 4921 and the authorization from the department's chair.

ELEN 4930 - EIT Exam Seminar (2)

Analysis of the topics of electrical and computer engineering in order to strengthen the knowledge of the student who aspires to take the fundamental engineering revalidation exam. Discussion of the common topics of mathematics, probability and statistics, economics, ethics, and engineering science. Integration of theoretical and practical aspects similar to those presented in the revalidation ewam offered in Puerto Rico. It requires 75 hours of face-to-face closed laboratory.

Prerequisite: Authorization from the department's chair.

ENDE - Entrepreneurial Development

ENDE 1100 - Introduction to Entrepreneurial Development (2)

Introduction to the basic concepts for starting and developing a business. Discussion of legal, financial and personal Prerequisites for establishing a business with emphasis on the planning and elaboration of the business plan.

ENDE 3315 - Fundamental Procedures for Establishing A Business (3)

Study and analysis of basic procedures for establishing a business. Emphasis on the entrepreneurial vision, type of business entity, a product versus a service enterprise, viability, governmental Prerequisites and sources for financing.

Prerequisite: ENDE 1100.

ENDE 3316 - Business Management (3)

Integration of basic management principles, marketing and accounting in business management. In the field of management, the organizational structure, functions, job

descriptions, assignment of responsibilities and personnel evaluation are included; in the accounting areas, the financial structure of the enterprise and cash management are included and in the field of marketing the market and profile of clientele, the analysis of the competition and marketing strategies are discussed.

ENDE 3320 - Electronic Commerce in Enterprise Development (4)

Study of the theoretical foundations of electronic commerce for the conversion of a presential company to a virtual one, framed in an international commercial environment. Application of the basic Internet tools such as: electronic mail, on-line service evaluation, payment forms and electronic pages related to the entrepreneurial world. Analysis of the electronic purchase and sale process, ethical principles and legal and security aspects in electronic commerce. Requires sixty (60) hours of lecture/lab.

ENGL - English

ENGL 2054 - Speech Workshop (3)

Emphasis on pronunciation, syntax and intonation through oral practice and laboratory training. For non-native speakers of English.

ENGL 2060 - Conversation and Grammar Review (3)

Development of oral expression by discussion of current events and daily life. Practice in pronunciation and oral comprehension. Grammar review stressing oral expression. Systematic study of vocabulary and common idiomatic expressions.

Prerequisite: 9 credits in English.

ENGL 2075 - Technical Literature (3)

Selected technical literature is studied in terms of structure and content. Emphasis on the preparation and use of technical reports.

ENGL 2076 - Reading and Writing of Technical Texts (3)

Analysis of academic texts such as textbooks, professional journals and literature available on line and used in content courses; practice of reading and writing strategies of required specialized technical texts; workshops using the computer as a work tool.

ENGL 2086 - Business English (3)

Fundamentals of grammar, sentence structure, punctuation, spelling, and vocabulary building; practice in writing business communications.

ENGL 3007 - Advanced Writing (3)

Development of advanced writing skills. Emphasis on informative and persuasive writing.

Prerequisite: GEEN 2311.

ENGL 3008 - Critical Writing (3)

Development of critical analysis and evaluation strategies to improve academic writing. Emphasis on the revision and editing processes of written texts.

Prerequisite: GEEN 2311.

ENGL 3025 - Writing of Professional Documents (3)

Analysis of the theory and development of professional writing techniques. Emphasis on the type of written communication mostly used in different work scenarios. Writing of reports, proposals and correspondence. Use of the computer in writing professional documents. Review of the grammatical structure of English in context.

ENGL 3030 - Technical-Scientific Writing in Sciences (3)

Development of skills in technical-scientific writing. Emphasis on research techniques, technical reports and publications of scientific findings.

Prerequisite: Have approved nine (9) credits in English at the corresponding level with a minimum grade of C.

ENGL 3035 - Proposal Writing (3)

Development of methods and strategies to identify external resources and write proposals. Emphasis on the quality and relevance of the information and the stylistic format.

ENGL 3073 - Introduction to Linguistics (3)

Integration of the fundamental concepts of language. Includes phonology, phonetics, morphology, syntax, lexicon and semantics.

ENGL 3309 - Communication Practices (3)

Development of the skills necessary for effective communication in group work. Emphasis on effective oral communication and persuasive writing.

ENGL 3310 - Public Speaking (3)

Development of the skills of public speaking for the presentation of lectures, information and other activities.

Development of the critical analysis of oral speech. Improvement of pronunciation.

ENGL 3320 - Fundamental Structures of Grammar (3)

Analysis of the morphology and syntax of English. Emphasis on the analysis and description of the fundamental structures of grammar.

Prerequisite: ENGL 3073.

ENGL 3325 - Fundamentals of Phonetics (3)

Analysis of the production and perception of the phonetic and phonemic systems of United States English. Development of techniques and methods used to correct deficiencies in pronunciation and their application in the classroom. Requires 30 hours of lecture and 15 hours of lab.

Prerequisite: ENGL 3073.

ENGL 3330 - Comparative Analysis of English and Spanish (3)

Description and comparison of phonetics, morphology, syntax, semantics, and lexicon of English and Spanish. Analysis of their implications in the teaching of English as a second language.

Prerequisite: ENGL 3073.

ENGL 3350 - The Literary Genres (3)

Application of the methods of analysis and interpretation of novels, short stories, poetry, and drama.

Prerequisite: GEEN 2312.

ENGL 3400 - Literature for Young Adults (3)

Analysis of the literature intended for young adults and of the criteria used for its selection in the teaching of English as a second language and its application to the classroom.

ENGL 3410 - North American Voices (3)

Analysis of the major North American authors; the evolution of their thoughts and literary styles is studied. Development of writing skills and critical analysis.

Prerequisite: ENGL 3350.

ENGL 3420 - Analysis of Selected Works of British Authors (3)

Reading and analysis of literary genres of British authors: poetry, essays, theater, short stories, and novels. Analysis of the evolutionary development of their thought and literary styles.

Prerequisite: ENGL 3350.

ENGL 3430 - Worldwide English Voices (3)

Analysis of literary production written in English outside the United States and Puerto Rico where English is used to create literature.

Prerequisite: ENGL 3350.

ENGL 3435 - Puerto Rican Voices (3)

Analysis of Puerto Rican literature written in English. Evaluation of the cultural, social and economic aspects that give origin to individuality as well as to the diversity of their voices. Development of writing skills and critical analysis.

ENGL 3440 - Children's Literature (3)

Analysis of literature intended for children and preadolescents. Identification of the criteria for the selection of literature and its use in the teaching of English as a second language.

ENGL 3450 - Analysis of Graphical Novels (3)

Development of writing skills and critical thought through the analysis of the techniques, styles, and topics in graphical novels as a literary genre.

Prerequisite: ENGL 3350.

ENGL 3500 - Writing of Texts of Various Genres (3)

Writing through the study of literary genres and writing styles that challenge and redefine its parameters. It includes the study and production of digital texts and texts that combine various genres.

ENGL 3510 - Texts of the Popular Culture (3)

Description of topics, icons and contemporary forms of the graphic and digital texts of the popular culture. Analysis of the social and political meaning and the impact of technology in literature and popular communication. Includes writing skills.

ENGL 3520 - Cross Cultural Studies (3)

Analysis of cultural diversity and interaction through reading and other media. Critical study of cultural themes.

ENGL 3700 - Writing for Emerging Media (3)

Analysis and writing practice for emerging media, such as apps, video sharing services, video games, among others.

ENGL 3850 - The Short Story (3)

Analysis of the techniques and the style of the short story as a literary genre. Requires writing and critical analysis.

Prerequisite: ENGL 3350.

ENGL 3863 - The Poetry (3)

Analysis of the techniques and the style of the poetry as a literary genre. Requires writing and critical analysis.

Prerequisite: ENGL 3350.

ENGL 4000 - Shakespeare (3)

Analysis of the Shakespeare's most representative drama work. Comparison of tragedies, comedies, stories, poetries and plays productions.

Prerequisite: ENGL 3350.

ENGL 4014 - Modern Drama (3)

Reading and discussion of plays, from the late nineteenth century to the present.

Prerequisite: ENGL 3350.

ENGL 4015 - Translation Workshop (3)

Development of basic skills of translation of Spanish to English and of English to Spanish. Application of different theories of translation.

Prerequisite: GEEN 2313 approved with a minimum grade of C.

ENGL 4030 - Creative Writing (3)

Analysis of the theory of creative writing and the writing of creative texts of various genres. Application of creative writing processes and techniques. Requires intensive review.

ENGL 4073 - Acquisition of English as a Second Language (3)

Theories of second language acquisition as compared and contrasted to first language acquisition. Variables that affect the acquisition of English as a second language including relative findings in the areas of psychology, sociology, neurolinguistics and anthropology.

ENGL 4083 - Worldwide English (3)

Comparison of variations in the form and use of language determined by the social situation and by the sociocultural group, emphasizing English as a world language. Study of the historical development of English and of the new linguistic ecologies where new types of English are spoken. Analysis of bilingualism, diglossia and the relationship between language and identity.

ENGL 4100 - Linguistics Issues (3)

Analysis of the structure of English from a cognitive and linguistic perspective. Includes the study of syntax and semantics, theoretical frameworks and experimental data.

ENGL 4400 - The Novel (3)

Interpretative of the techniques, styles and themes in the novel as a literary genre. Evaluation of outstanding novels written by world recognized authors. Requires writing and critical analysis.

Prerequisite: ENGL 3350.

ENGL 4440 - Caribbean Voices (3)

Study of topics and literary genres of the Caribbean. Analysis of the cultural, historic and artistic roots of the multiple identities of the Caribbean reflected in literature written in English.

ENGL 4500 - Language and Power (3)

Analysis of how language fashions our perception of reality. Identification of the role of language in the construction of the sociopolitical speeches from a multidisciplinary and humanistic perspective.

ENGL 4700 - Literature Since 1945 (3)

Analysis of literature written since the end of World War II, emphasizing its literary values from a sociological and philosophical perspective. Requires writing and critical analysis.

Prerequisite: ENGL 3350.

ENGL 4799 - Intensive Writing (3)

Emphasis on intensive writing of topics related to English as a discipline. This course refines academic writing skills in preparation for research and publication writing.

ENGL 4800 - Research in English (3)

Application of research methods for the writing of a proposal related to English as a discipline. Includes selection, organization, presentation and documentation of information available through printed and electronic media.

Prerequisite: GEEN 2313.

ENGR - Engineering

ENGR 1100 - Introduction to Engineering (3)

Study of the development of engineering as a profession and its social function. Emphasis on the social and professional responsibility of an engineer. Study of the engineering code of ethics, including the discussion of real cases. Analysis of critical thinking and development of creativity. Application of engineering tools for the solution of problems. Discussion of technology and engineering and of the challenges of the engineering profession for the future. Requires 30 hours of lecture and 30 hours of lab.

ENGR 1200 - Introduction to Sustainable Engineering (3)

Description of the patterns and processes in the natural world, the human impacts on the Earth, the main environmental problems and the supply of conventional and sustainable energy. Fundamental understanding of sustainability principles, life cycle analysis, tools, design principles and sustainable engineering applications. Case study of sustainable engineering.

Prerequisite: ENGR 1100.

ENGR 2130 - Introduction to Engineering Computing (3)

Introduction to engineering problem solving using modern computer tools. Design and implementation of algorithms using a high level language program. Requires programming projects where applications and practical problems of the different engineering disciplines will be introduced. Requires 45 hours of lecture-lab.

Prerequisite: MATH 1500.

ENGR 2220 - Computerized Engineering Graphics (3)

Study of graphical terminology. Analysis and solution of spatial problems. Discussion of symbols and standards applied to engineering. Study of computer graphics: equipment and programming. Use of geometric elements in two and three dimensions in computer graphics. Analysis of object visibility. Application of programs for computer-aided design commonly used in engineering.

Prerequisite: GEMA 1200, GEIC 1010.

ENGR 3200 - Probability and Statistics (3)

Set analysis, study of combinations and repeated attempts. Application of probability functions for discreet random variables and probability density functions for continuous random variables. Analysis of the expected value for functions of random variables and the central limit theorem. Study of sampling statistics and its distributions. Includes central trend measurements and dispersion, points and intervals estimation, hypothesis tests, linear regression and correlation.

Prerequisite: MATH 2251.

ENGR 3300 - Engineering Economics (3)

Economic analysis related to decision making in engineering projects where time and money are the priority factors. Includes cost theory, discounted cash flows, comparison of alternatives using equivalent annual costs, present value and rate of return on investments; analysis of the break-even point, depreciation, effects of income tax rates, equipment replacement, risk and sensitivity analysis.

Prerequisite: MATH 2251.

ENGR 3340 - Foundations of Statics and Dynamics (3)

Analysis of force systems and the application of the law of equilibrium to particles and rigid bodies. Analysis of structural systems including internal forces and friction. Calculation of gravity centers, centroids. Analysis of kinetics and kinematics of particles and rigid bodies. Discussion of vibratory systems.

Prerequisite: PHYS 3311.

ENGR 3343 - Thermal and Fluid Sciences (4)

Study of the fundamental concepts of thermodynamics, mechanics of fluids and heat transfer. Application of the first and second law of thermodynamics in closed and open systems. Evaluation of power cycles and refrigeration. Study of fluid statics. Analysis of energy equations, amount of momentum and mass. Evaluation of the flow in pipes and calculation of losses. Analysis of heat transfer by conduction.

Prerequisite: PHYS 3312, CHEM 2115.

ENGR 3350 - Materials Science (3)

Study of materials. Includes atomic bonds, crystalline structure, imperfections, diffusion process and the mechanical, thermal, electrical and magnetic behavior of metals, polymers, ceramic and compounds. Emphasis on the elasticity, plasticity, yielding and fatigue. Discussion of diagrams of phase balance, microstructures and corrosion of metals.

Prerequisite: PHYS 3312, CHEM 2115.

ENGR 3365 - Fundamentals of Electrical Engineering (3)

Study and analysis of electrical circuits. It includes elements of circuits, elementary theory of networks, differential equations of transient circuits, circuit dynamics and permanent sinusoidal response of circuits, three-phase circuits and power. Analysis of electromechanical systems. It includes theory of magnetic circuits, transformers, electrical machines and electromechanical energy conversion.

Prerequisite: PHYS 3312 and MATH 3400.

ENGR 3500 - Professional Ethics for Engineers (2)

Analysis of the implications of laws, regulations and canons of ethics applicable to the practice of engineering in the public and private sector. Study and discussion of cases. Evaluation of risk, economic impact, ethics to alert authorities of decisions that may causPrerequisites: ENGR 3300, GEPE 4040.

Prerequisite: ENGR 3300, GEPE 4040.

ENTR - Entrepreneurial and Managerial Development

ENTR 2100 - Organizations: Dynamics and Evolution (3)

Study of the nature, scope, operation and multidimensional impact of organizations. Discussion of the elements and characteristics to classify organizations and their functional areas. Emphasis on transformation and the challenges faced by organizations in the local and global context.

Prerequisite: GEEC 2000.

ENTR 2200 - Foundations of Entrepreneurship (3)

Study of the basic principles on entrepreneurial thought. Identification of opportunities. Formation and acquisition of companies.

ENTR 2212 - Social Entrepreneurism (3)

Study of the trends in entrepreneurism that arise from collective actions directed to generate social benefits in organizations for profit, as well as those in the philanthropic sector. Development of administrative skills that transform an idea into a viable company that serves a clientele through the use of administrative methods to fulfill its social mission.

ENTR 2300 - Innovation and Entrepreneurship (3)

Study of the process of innovation and entrepreneurship, related to the formation and development of different types of organizations. Emphasis on the identification and evaluation of opportunities and their socioeconomic impact at the local and international level.

Prerequisite: ENTR 2100.

ENTR 3900 - Entrepreneurial and Managerial Strategies (3)

Study of the theoretical concepts of strategic management. Analysis of the strategic planning process through the study of local and international organizations in their different stages of development.

Prerequisite: ENTR 2200 or 2300 and MKTG 1210.

ENTR 3910 - Family Businesses (3)

Study of family businesses and their importance in the economy of Puerto Rico and at the world-wide level. Analysis of the strengths and the weaknesses of family businesses. Discussion of the challenges that face these businesses regarding business strategies.

Prerequisite: ENTR 3900.

ENTR 4100 - Digital Entrepreneurship (3)

Analysis of the theoretical and practical concepts of digital entrepreneurship. Emphasis on the study of digital business models. Application of the technological tools available for the design and management of strategies in digital entrepreneurship. The design of a digital plan or project that solves a current challenge of the local or international business ecosystem is required.

Prerequisite: BADM 3900, ENTR 3900.

ENTR 4400 - Design and Development of a Business Plan (3)

Application of entrepreneurship components and strategies to the development of a business plan.

Prerequisite: ENTR 3900, ACCT 1162.

ENTR 4910 - Entrepreneurial and Managerial Supervised Practicum (3)

Application of entrepreneurial and managerial knowledge, skills and attitudes in a work setting under the supervision of a teacher. The student is required to complete a minimum of 135 supervised hours during the academic term.

Prerequisite: ACCT 1162, ENTR 4400.

ENTR 4930 - Entrepreneurial or Managerial Integrated Project (3)

Integration of entrepreneurial and managerial knowledge, skills and attitudes through one of the following special projects under the supervision of a professor: execute the business plan developed by the student in the ENTR 4400 course, develop a new business plan at the request of an organization, run a business simulation or develop an innovation project in an existing organization.

Prerequisite: ENTR 4400.

EVSC - Environmental Science

EVSC 1110 - Introduction to Environmental Sciences (3)

Introduction to the study of environmental sciences with emphasis on its scientific base. Attention will be given to the social and economic aspects. Requires 30 hours of lecture and 45 hours of lab.

EVSC 2210 - Environmental Policies, Laws and Regulations (3)

Study and analysis of the policies and most relevant legal resources for pollution control and the conservation of natural resources in Puerto Rico and the United States.

Prerequisite: EVSC 1110 o EVMA 1110.

EVSC 2500 - Quality of Air (2)

Study of the characteristics of air, ways it is contaminated and the effects of this. Emphasis on sources that generate contamination, the laws that control it and the technologies used in its control.

EVSC 3001 - Management and Conservation of Natural Resources (4)

Introduction to the use, conservation and management of natural resources: soil, water, forests, wild life, sea, minerals and air. The principal conservation mechanisms and strategies as well as restoration will be studied. Requires 45 hours of lecture and 45 hours of lab.

Prerequisite: EVSC 1110, BIOL 1101, 1103.

EVSC 3600 - Waste Management (3)

Analysis of the generation, handling, disposition and treatment of solid, dangerous and toxic wastes.. Explanation of their origin and characterization. Evaluation of the alternatives for storage, transportation and treatment.

Emphasis on their reduction, reuse and recycling.

Prerequisite: BIOL 3505 and CHEM 1111.

EVSC 3603 - Health and Occupational Safety in Environmental Protection (3)

Introduction to the study of health and occupational safety in environmental protection. Includes the identification of dangers, description of risks, prevention of damage and regulations. Emphasis on the development and handling of programs in the industrial and commercial context.

Prerequisite: EVSC 3600.

EVSC 3713 - Geographic Information Systems in Environmental Sciences (3)

Application of Geographic Information Systems in environmental studies. Identification of diverse validated sources of geospatial information and their administration. Evaluation of techniques for the analysis of applicable geoespatial data related to the environmental impact. Requires 30 hours of lecture and 45 hours of closed lab.

Prerequisite: EVSC 3001.

EVSC 4401 - Research in Environmental Sciences (3)

Application of research designs used in scientific environmental studies. Emphasis on the main methods of evaluation, analysis and control of contamination in the conservation and administration of natural resources. Requires 30 hours of lecture and 45 hours of lab.

EVSC 4504 - Use, Conservation and Quality of Water (3)

Evaluation of water as a resource, its use, and its relation to the environment. Emphasis on protection mechanisms to maintain its quality such as treatment, quality standards and analysis. Requires 30 hours of lecture and 45 hours of lab. Prerequisites: EVSC 3602, CHEM 2212.

Prerequisite: EVSC 3602, CHEM 2212.

EVSC 4910 - Internship in Environmental Sciences (3)

Practical work experience in government, business, industry or other organization with a program of environmental control or protection. This practice will be performed under the supervision of enterprise personnel in coordination with the assigned professor. This experience may be directed to the areas of pollution-control and/or conservation of natural resources. One hundred sixty (160) hours of work are required.

Prerequisite: Have approved 21 credits from the major.

EVSC 4955 - Integration Seminar in Environmental Sciences (1)

Development and oral and written presentation of a creative work using as the primary base scientific articles in which the knowledge and experience acquired in environmental sciences are integrated. Prerequisite: The approval of 24 credits in environmental science courses.

Prerequisite: Have approved 24 credits in environmental science courses.

EVTH - Environmental Technology

EVTH 397_ - Special Topics (3)

Analysis and discussion of specific topics related to the environment.

EVTH 3010 - Environmental Public Policy (3)

Interpret state and federal laws on environmental public policy and safety in different works scenarios. Emphasis on the general concepts and principles regarding policy, planning, and administration of natural resources; in addition, procedure Prerequisites and techniques for preparing and utilizing different types of environment documents and their effect on decision-making. Concurrent with CHEM 2221.

EVTH 4020 - Environmental Evaluation (3)

Application of the practices, techniques and methods used in activities for planning, protection and environmental evaluation. Emphasis on the identification and solution of problems from a interdisciplinary perspective. Concurrent with CHEM 3000.

Prerequisite: EVTH 3010.

EVTH 4910 - Internship (3)

Conduct of a research project in a governmental agency, private company or in another organization that carries out activities such as of research, conservation or environmental management. A minimum of 120 hours under the supervision of a faculty member isPrerequisites: Have passed 40 credits of the major and the authorization of the director of the department.

Prerequisite: Have approved 40 credits of the major and the authorization of the director's chair.

EVTH 4960 - Integration Seminar (1)

Integration of acquired knowledge by oral and written presentations of themes dealing with the environment. Analysis, discussion and possible solutions to environmental problems. Emphasis on matters related to regulations, use and management of environmental resources and ethical implications.

Prerequisite: Authorization of the director's chair.

FINA - Finance

FINA 1000 - Ethics in Finance (3)

Discussion of ethical and moral aspects related to the finance professional. Their importance in the success and integrity of the profession. Emphasis on the most commonly used fraud systems.

FINA 2101 - Corporate Finance I (3)

Study of the basic and contemporary principles of corporate financial management and its use in decision-making. Emphasis on the use of mathematical models to determine the present and future value of investments. Use of techniques to evaluate the financing of the company's assets, risk and project performance. Analysis of the structure and cost of capital.

Prerequisite: ACCT 1161 and GEMA 1200.

FINA 2102 - Corporate Finance II (3)

Analysis and solution of problems in corporate governance. Emphasis on investments and financing, as well as the dividend policy using the electronic data sheet. Discussion of the acquisition, consolidation, restructuring and liquidation processes. Analysis of cases and integrative problems related to the capital structure.

Prerequisite: FINA 2101.

FINA 2150 - Electronic Spreadsheet in Finance (3)

Management and use of digital instruments in financial analysis. Emphasis on the use of electronic spreadsheets for decision-making.

FINA 3130 - Credit Risk Management (3)

Analysis of the identification, measurement, administration and mitigation of credit risk. Discussion of the best practices, the legal aspects and the decision to grant the credit. Emphasis on the development of models through the use of the electronic spreadsheet.

Prerequisite: FINA 2101 and MAEC 2222.

FINA 3150 - Personal Finance (3)

Discussion of personal finance planning of available resources on a short and long term basis. Analysis of financial and investment decisions with regard to present and future available income and the personal or family budget. Emphasis on the decision-making process for the selection of resources for financial protection (insurance); retirement planning, personal investment and the tax payments.

FINA 3235 - Money and Banking (3)

Role of money in the development and financing of financial institutions of a banking and non-banking nature and in the economic system in general. The instruments of the money market, of capital, the role of the Federal Reserve System, monetary policy and the International Monetary Fund are studied.

Prerequisite: MAEC 2212.

FINA 3300 - Financial Markets (3)

Discussion of the operation and characteristics of the main primary and secondary financial markets. Discussion of the role of brokers and financial institutions as well as control mechanisms and regulations. Analysis of the main indices and averages of the markets, as well as the interpretation of published financial information. Emphasis on the theory of efficient markets, other contemporary theories and their application to investment strategies.

Prerequisite: FINA 2102 y MAEC 2222.

FINA 3400 - Introduction to Risk and Insurance (3)

Evaluation and selection of the insurances in different companies. Emphasis on the methodology to carry out the analysis of risk, and the theoretical and practical principles in the insurance industry. Application of the techniques of handling subscriptions and insurance appraisals. Discussion of civil responsibility, bodily injuries and other people's property. Analysis and interpretation of financial statements, laws and ethics in the insurance industry.

Prerequisite: FINA 2101.

FINA 3500 - Introduction to Real Estate (3)

Analysis of the principles that govern the administration, possession and use of real estate, within the legal, social and economic context. Discussion of the evaluation, appraisal and financing aspects.

Prerequisite: FINA 2101.

FINA 3700 - Fundamentals of Investment (3)

Identification of the characteristics and mechanisms of the investment process. Discussion of the risk and yield theory. Analysis of the main stock-exchange investments: bonds, stocks, options, mutual funds, futures, and others. Emphasis on the models of evaluation used in the investment portfolio.

Prerequisite: FINA 3300.

FINA 4100 - International Finance (3)

Analysis and practices of enterprise financial administration within the context of globalization. Includes the analysis of international financial markets. Evaluation of resources and uses of funds abroad and the criteria in the selection of diverse investment opportunities. Emphasis on interchange mechanisms and financial instruments that cover risk in international transactions.

Prerequisite: FINA 3700.

FINA 4910 - Practicum in Finance (3)

Practical experiences in the finance field supervised jointly by a university professor from the area of finances and by a professional designated by the management of the practice center. Requires a minimum of 135 hours during the academic term.

Prerequisite: Authorization from the department's chair and have approved 21 credits from core courses and 21 credits from the major courses.

FINA 4970 - Seminar in Finance (3)

Analysis of topics in the world of finance, with emphasis on modern trends. Integration of new developments in the finance field.

Prerequisite: FINA 4100.

FORS - Forensic Science

FORS 2000 - Introduction to Forensic Science (3)

Introduction to the study of the general concepts and technical aspects of forensic science and its relation to the justice system.

FORS 3010 - Forensic Biology Skills Lab (1)

Development of skills and use of different specialized methodologies in the area of forensic serology. Application of serology, immunology, genetics and interpretation of

results techniques. Development of skills in the laboratory that can be applied in scientific research and quality control. It requires 45 hours of face-to-face closed laboratory.

Prerequisite: BIOL 2153 and CHEM 2221. Corequisite: BIOL 3010.

FORS 3010 - Skills Laboratory in Forensic Biology (1)

Development of skills and the use of different methodologies specialized in the area of forensic serology. Application of techniques of serology, immunology, genetics and interpretation of results. Development of laboratory skills that could be applied in the scientific research and quality control. Requires 45 hours of face-to-face closed laboratory.

Prerequisite: BIOL 2153 and CHEM 2221. Corequisite: BIOL 3010.

FORS 3300 - Security in Informatic Networks (3)

Study of the fundamentals of network security, access control, encryption protocols and traffic capture and analysis programs. Identify vulnerabilities, risks, threats and local or remote attacks against networks, as well as the use of controls and protection methods for these.

Prerequisite: COTN 2122.

FORS 3350 - Computational Security (3)

Discussion of the fundamentals of computer security such as authentication, file systems and encryption methods. Study of cases where vulnerabilities, risks, threats and attacks against computer systems are discussed, as well as the use of controls and protection methods.

Prerequisite: COMP 2315.

FORS 3450 - Digital Evidence (3)

Study of the different technological tools that can be used as digital evidence in a court. Analysis of cybernetic crimes, the applicable legislation, the handling and the safekeeping of the evidence. Discussion of the strategies recommended for the forensic analysis of computers and other telecommunications equipment. Case study analysis.

Prerequisite: FORS 2000 and COTN 2122.

FORS 397_ - Special Topics (3)

Special Topics in Forensic Biology

FORS 3970 - Special Topics (3)

Analysis and discussion of different specific topics on forensic science with emphasis on the discussion of cases.

Prerequisite: FORS 2000.

FORS 4100 - Multimedia Analysis (4)

Analysis of the techniques and forensic procedures to collect, manage and preserve the digital evidence in both video and audio. Application of these techniques and procedures by following the standard protocols and multimedia tools. Requires 45 hours of lecture and 45 hours of lab.

Prerequisite: FORS 3450.

FORS 4400 - Forensic Toxicology (4)

Application of the principles of toxicology to the area of forensic science. Emphasis on legal medical aspects, mechanism of action and on analysis techniques for toxic substances. Requires 45 hours of lecture and 45 hours of lab.

Prerequisite: BIOL 1116, CHEM 2222.

FORS 4421 - Forensic Investigation I (3)

Scientific, practical and theoretical study of the crime scene with the purpose of reconstructing the scene and gathering information and evidence to be used in establishing how the acts occurred and identifying those responsible for the crime. Requires 30 hours of lecture and 45 hours of lab.

Prerequisite: FORS 2000, CJUS 1000.

FORS 4422 - Forensic Investigation II (4)

Introduction to the theoretical and practical study of the methods used in the gathering, management, preservation and analysis of physical evidence at the scene of the crime. Emphasis on analysis proceedings employed in the field and in the laboratory. Requires 45 hours of lecture and 45 hours of lab.

Prerequisite: FORS 4421, CHEM 4220.

FORS 4511 - Forensic Biological Analysis I (3)

Application of the principles of forensic serology. Forensic biological analysis using simulated material samples. Includes determination of blood type and characteristics, ABO human blood tests, and blood spot analysis. The characteristics and specific analyzes of other fluids, such as semen, saliva and feces, are analyzed. It is specified in the

collection and preservation of biological material related to a crime. It requires 30 hours of conference and 45 hours of closed laboratory.

Prerequisite: BIOL 1104, 3220 and FORS 3010.

FORS 4512 - Forensic Biological Analysis II (3)

Study of the genetic applications for forensic research. Includes the collection, processing, analysis and interpretation of biological evidence using molecular Biology techniques with emphasis on the forensic analysis of DNA. Requires 30 hours of lecture and 45 hours of closed lab.

Prerequisite: FORS 4511 and BIOL 3010. Corequisite: BIOL 4604.

FORS 4910 - Forensic Practice (3)

One hundred thirty-five (135) hours of practical work in a criminal investigation scenario or the development of a research project under the supervision of a practice center or the Program faculty.

Prerequisite: Have approved a minimun of 18 credits from the major courses and authorization from the program director or coordinator.

FORS 4960 - Integration Seminar (1)

Integration of knowledge obtained in the courses of the major by means of an oral and written presentation of a creative work in which a contemporary problem of forensic investigation is analyzed.

Prerequisite: Have approved a minimun of 18 credits from the major courses and authorization from the program director or coordinator.

FREN - French

FREN 1001 - Elementary French (4)

Essentials of French grammar with emphasis on the spoken language.

FREN 1002 - Elementary French (4)

Essentials of French grammar with emphasis on the spoken language.

FREN 1011 - French I (3)

Introduction to the French language, through the immersion method. Emphasis on oral communication skills (listening / speaking), reading, writing, and visual interpretation. It requires additional hours of open laboratory.

FREN 1012 - French II (3)

Study of the French language through the immersion method. Emphasis on oral communication skills (listening / speaking), reading, writing, and visual interpretation. Requires additional hours of laboratory.

Prerequisite: FREN 1011.

FREN 2021 - French III (3)

Study of the French language at an intermediate level through the application of the immersion method. Emphasis on oral communication skills (listening / speaking), reading, writing, and visual interpretation. It requires additional hours of open laboratory.

Prerequisite: FREN 1012.

FREN 2022 - French IV (3)

Study of the French language at an advanced level by applying the immersion method. Emphasis on oral communication skills (listening / speaking), reading, writing, and visual interpretation. It requires additional hours of open laboratory.

Prerequisite: FREN 2021.

FREN 3010 - Diction and Phonetics (3)

Strengthening of oral communicative competence. Study of the sounds, intonation and rhythm of the French language through the basic knowledge of phonetics. Oral practice through the reading of short texts, oral presentations and simulation of everyday situations. It requires additional hours of open laboratory.

Prerequisite: FREN 2022.

FREN 3020 - Advanced Writing (3)

Strengthening of written communicative competence in French. Study of discursive genres in French from everyday, academic and professional life. Identification of the registers of the language and the pertinent grammatical elements in order to write clearly and coherently, using an appropriate vocabulary.

Prerequisite: FREN 2022.

FREN 3021 - French Literature I (3)

Discussion of key texts of French literature from the Middle Ages to the seventeenth century and the schools or literary periods that frame them. Emphasis on the study of

literary history, critical reading, and literary analysis.

Prerequisite: FREN 3010 y FREN 3020.

FREN 3022 - French Literature II (3)

Analysis of key texts of French literature from the 18th century to the end of the 20th century and of the schools or literary periods that frame them. Emphasis on the study of literary history, critical reading, and literary analysis.

Prerequisite: FREN 3021.

FREN 4010 - French Culture and History (3)

Study of issues related to contemporary French culture from a historical approach. Analysis of texts of various genres, as well as visual arts from an intercultural approach.

Prerequisite: FREN 2022.

FSMT - Restaurant and Food Services Administration

FSMT 1210 - Sanitation and Security in Food Services (1)

Elaboration of a plan using current control guides in preparing and serving foods. Study of the biological, chemical and physical aspects in food security. Discussion and application of health and security practices in the work scene.

FSMT 1220 - Service Theories and Practices (2)

Study of general norms for serving tables and formal table manners. Discussion of theories and styles for serving clients. Application of service norms.

FSMT 2101 - Purchasing Systems, Inventory and Storage Control (2)

Description of purchasing, distribution and selection systems. Study of product quality and available specialized equipment for different food services. Discussion of different types of storages and inventory controls.

FSMT 2104 - Buffet and Catering Service (3)

Description of the development, operation and management of buffet and catering businesses. Comparison of traditional meals and buffets. Planning of buffet and catering services. Design of creative concepts in planning the business.

Prerequisite: FSMT 1210, 1220, TURI 3302. .

HMGT 3310 - Cocktail Services (3)

Provides necessary knowledge for the preparation of a great diversity of alcoholic and non-alcoholic beverages, served in domestic and international settings. Presentation of the techniques, procedures, and practices appropriate for handling and using glassware, materials, and equipment. Application or simulation of the measurements and liquors in mixing drinks. Ethical and legal aspects of the profession.

GAME - Design and Development of Videogames

GAME 1100 - Design of Videogames (3)

Study of the fundamental concepts and the necessary criteria to be able to make appropriate decisions in the design processes of a video game. Discussion of the local and global impact of videogames on individuals, organizations, and society. Evaluation of the artistic, mechanical, logistical, and commercial aspects of a video game. Design of a video game from its conceptual stage to its concretization in a design document. Drafting a video game design document. Requires 30 hours of conference and 30 hours of closed laboratory.

GAME 1200 - Interactive Narrative for Videogames (3)

Study of the fundamental concepts of narrative for video games. Discussion of the criteria and methods used to provide narrative effectively in a video game. Writing a script for a video game that uses appropriate narrative methods. Discussion of the concept of intellectual property. Requires 30 hours of conference and 30 hours of closed laboratory.

GAME 2101 - Graphics for Videogames I (3)

Application of fundamental concepts of graphic design, such as balance, composition, contrast, lighting, perspective, color theory and texture. Elaboration of graphics and 2D animations according to the restrictions and needs of a video game. Use of tools and resources related to the management of 2D graphics and animations in their different digital representations. It requires 30 hours of conference and 30 hours of closed laboratory.

GAME 2102 - Graphics for Videogames II (3)

Application of basic concepts of 3D digital art, such as object modeling, geometric transformations, integration of materials, textures, roughness, and simple lighting and blur effects. Elaboration of 3D graphics according to the

restrictions and needs of a video game. Use of tools and resources related to the management of 3D graphics in their different digital representations. It requires 30 hours of conference and 30 hours of closed laboratory.

Prerequisite: GAME 2101.

GAME 2103 - Graphics for Videogames III (3)

Application of advanced 3D digital art concepts such as sculpting, animation, rigging, inverse kinematics, and composite lighting and blur effects. Elaboration of 3D animations according to the restrictions and needs of a video game. Use of tools and resources related to the management of 3D animations in their different digital representations. It requires 30 hours of conference and 30 hours of closed laboratory.

Prerequisite: GAME 2102.

GAME 3101 - Videogame Programming I (3)

Application of programming concepts and basic techniques used in the development of a video game. Use of engines for the development of video games and tools that allow to build the different components that make up a video game. Development of one or more video games that integrate 2D graphics and animations, sound and interactivity. Requires 30 hours of conference and 30 hours of closed laboratory.

Prerequisite: COMP 2400.

GAME 3102 - Videogame Programming II (3)

Application of programming concepts and intermediate techniques used in the development of a video game. Use of engines for the development of video games and tools that allow to build the different components that make up a video game. Elaboration of one or more video games that integrate 3D graphics, physics laws and databases. It requires 30 hours of conference and 30 hours of closed laboratory.

Prerequisite: GAME 3101.

GAME 3103 - Videogame Programming III (3)

Application of programming concepts and advanced techniques used in the development of a video game. Use of engines for the development of video games and tools that allow to build the different components that make up a video game. Development of one or more video games that integrate 3D animations, interconnectivity and artificial intelligence. It requires 30 hours of conference and 30 hours of closed laboratory.

Prerequisite: COMP 2900 and GAME 3102.

GAME 3400 - Artificial Intelligence for Videogames (3)

Application of artificial intelligence concepts related to the design and development of video games, such as behavior, strategy, route finding, voice recognition and synthesis. Implementation of artificial intelligence algorithms in a programming language. Development of one or more video games that integrate artificial intelligence algorithms. It requires 30 hours of conference and 30 hours of closed laboratory.

Prerequisite: COMP 2900 and GAME 3101.

GAME 4100 - Project: Design, Development and Publication of a Videogame (3)

Application of the knowledge acquired through the production of a video game from its conceptual stage to its publication as part of a multidisciplinary working group. Evaluation of compliance with the requirements and objectives of the project. Recognition of the importance of continuous professional development and awareness regarding social, professional, ethical-legal and safety problems and responsibilities in the discipline, as well as the importance of good communication and work in multidisciplinary teams to achieve a goal in common. It requires 30 hours of conference and 30 hours of closed laboratory. This course must be passed with a minimum of B.

Prerequisite: COMP 3400, GAME 1100, GAME 2103 and GAME 3103.

GAME 4300 - Emerging Issues in the Field of Videogames (3)

Discussion of emerging topics related to videogames. Includes innovating technologies, new algorithms and shifts of paradigms in areas directly or indirectly related to videogames, such as: the area of artificial intelligence, graphs, computerized vision, robotics, and the videogames industry. Requires 45 hours of lecture.

Prerequisite: COMP 3400, GAME 1100, 3103, 2103.

GAME 4400 - Videogame Development for Consoles and Portable Equipment (3)

Analysis of the architectures of different equipment and consoles, their capacities and their limitations. Development of videogames for different consoles and equipment. Requires 30 hours of lecture and 30 hours of closed lab.

Prerequisite: COMP 3400, GAME 1100, 3102, 2102. .

GAME 4500 - Emulators (3)

Discussion of the theory and design of various emulators. Includes the architecture of their respective consoles and the different tools used for analysis, extraction and modification of the equipment and the information within them. Requires 30 hours of lecture and 30 hours of closed lab.

GAME 4910 - Internship: Experience in the Videogames Industry (3)

Real experience in a work environment related to the design and development of video games in an institution approved by the course supervisor. Use of the knowledge, skills and abilities acquired during the program. Identification of the problems that threaten the video game industry and the mechanisms and tools used to overcome them. Recognition of the importance of continuous professional development and awareness regarding social, professional, ethical-legal and safety problems and responsibilities in the discipline. Recognition of the importance of good communication and work in multidisciplinary teams to achieve a common goal. It requires 135 hours of internship.

Prerequisite: COMP 3400, GAME 1100, 2102 and 3102 and the authorization of the department's chair. .

GASC - Culinary and Gastronomic Services

GASC 1000 - Culinary Fundamentals (3)

Introductory study of gastronomy with a perspective in the professional vocation of culinary arts. Emphasis in the analysis of local and global gastronomy. Discussion of the techniques of culinary development, measurement, and the tools most used in professional kitchens. Requires 45 hours of lecture-lab.

GASC 1200 - Selecting Raw Materials (3)

Introductory study of agricultural products, meat, fish and seafood most used in professional kitchens. Includes the seasonings used in cooking and the families to which they belong. Emphasis in the quality factors and the uses and profile of flavors of different products. Discussion of the basic techniques of cuts of meats, as well as those of handling of fish and seafood. Requires 45 hours of lecture-lab.

Prerequisite: GASC 1000.

GASC 2010 - Culinary Skills I (4)

Discussion of the basic concepts of the professional kitchen and its flow of work. Use of kitchen equipment and tools, as well as the application of the security and hygiene norms. Includes the preparations of broths, soups, mother sauces and the cutting of vegetables. Requires 30 class hours and 90 hours of closed lab.

Prerequisite: GASC 1000. Corequisite: GASC 1000.

GASC 2015 - Nutrition and Culinary Horticulture (3)

Study of the basic concepts of the production of vegetables and the new trends in the production of crops and their impact in nutritious eating. Emphasis in the application of concepts of nutrition in food preparation.

GASC 2020 - Culinary Skills II (4)

Application of the knowledge of making precision cutting by using the correct tools. Includes the skills of planning for the preparation of vegetables, rice, rhizomes, dry and liquid proteins, trimmings and embellishments. Emphasis in the preparation of cold food and small appetizers, as well as the places of finished plate production. Requires 30 class hours and 90 hours of closed lab.

Prerequisite: GASC 2010.

GASC 2026 - Operations Management in The Food and Beverage Industry (3)

Study of managerial and business concepts applied to the operations in the food and beverage industry. Emphasis on personnel management, costs, production, material conservation and customer service applied to the food and beverage industry.

Prerequisite: GASC 2010.

GASC 2500 - Puerto Rican Gastronomy (3)

Discussion of the evolutionary development of Puerto Rican gastronomy. Includes the profiles of the flavors in the different cooking techniques, analysis of the ingredients and the skills most common in the Puerto Rican kitchen. Requires 15 class hours and 60 hours of closed lab.

Prerequisite: GASC 2020.

GASC 2800 - Complementary Bakery (3)

Application of the operations of a bakery and their complementariness in the modern operations of the gastronomic industry. Application of cooking techniques in the work of small stations of production, the conservation

of materials and service to the client. Includes daily preparations of the bakery based on the type of operation. Professional experiences in the administrative area of the operation of bakeries. Requires 15 class hours and 60 hours of closed lab.

Prerequisite: GASC 2020.

GASC 2900 - Global Cuisine (3)

Analysis of regional gastronomies and their culinary philosophies in the kitchens of the greatest influence in the world. Includes the techniques, ingredients and the most popular recipes internationally. Emphasis in the preparations and the trends of each region studied. Requires 15 hours of lecture and 60 hours of practical laboratory in the kitchen under the supervision of the professor.

Prerequisite: GASC 2020.

GASC 2910 - Professional Practicum (4)

Learning experience by means of the application of the skills and knowledge of culinary arts and gastronomical sciences in a practice center approved by the faculty. Requires 240 hours of supervised practice in the gastronomy industry, presentation of evaluations (employer and professor) and attendance in the practice center. Prerequisite: All major courses; Corequisites: GASC 2500, 2800, 2900, FSMT 2104.

Prerequisite: Have approved all major courses.
Corequisite: GASC 2500, 2800, 2900, FSMT 2104.

GASC 3026 - Operations Management in the Food and Beverage Industry (3)

Study of managerial and business concepts applied to the operations in the food and beverage industry. Emphasis on personnel management, costs, production, material conservation and customer service applied to the food and beverage industry

Prerequisite: GASC 2010.

GASC 3300 - Innovation and Experimental Cooking (4)

Application of new local and global culinary concepts. Modification of recipes for the identification of changes in the textures and flavors of the food handled. Emphasis on the new culinary trends in molecular gastronomy and its implications in the New Kitchen. It requires 30 teaching hours and 90 hours of closed laboratory.

Prerequisite: GASC 2020.

GASC 3400 - Wines and Gastronomy (3)

Analysis of the basic concepts related to the wine industry in the context of world gastronomy. Discussion of varieties, styles, sowing, harvesting and soil characteristics and their effects on flavor and the winemaking process. It requires 45 hours of laboratory-conference.

Prerequisite: GASC 2900.

GASC 4000 - Advanced Cooking (4)

Application of advanced haute cuisine techniques. It includes the development of a general perspective of the cuisines of the world, the practical knowledge of nutrition and culinary sustainability. Emphasis on the professional table service required in the tourism industry, in the operational management of a restaurant and in the anthropological research of local gastronomy. It requires 30 teaching hours and 90 hours of closed laboratory.

Prerequisite: GASC 3300.

GASC 4040 - Culinary Design and Food Aesthetics (3)

Design of wine lists, seasonal menus, commercial spaces and ambience. Integration of lighting techniques, decoration, photography and food makeup. It requires 45 hours of laboratory-conference.

Prerequisite: GASC 2900.

GASC 4970 - Culinary Arts Integrative Seminar (3)

Analysis of topics related to contemporary aspects within the field of culinary arts and culinary sciences. Investigation of current trends in the development of the discipline from an integrating perspective of knowledge.

Prerequisite: ASC 2910, GASC 4000 and authorization from the department's chair and professor.

GEOG - Geography

GEOG 1014 - Elements of Oceanography (4)

General study of oceans including habitats, sea farming and the importance of ecology and natural resources to man. Requires 45 hours of lecture and related field projects. Non-credit course, except by arrangement with the dean of academic affairs.

GEOG 1114 - Introduction to the Ocean Sciences (4)

Fundamentals of marine biology, physical oceanography and oceanographic methods presented in an interdisciplinary context. Requires 30 hours of lecture and

60 hours of field trips or lab.

GEOG 1144 - Introduction to Cultural Geography (3)

Man-created environment: population; cultural landscape; social, economic and political phenomena in relation to natural environment.

GEOG 2000 - Earth Sciences (3)

Basic concepts of land sciences including the natural physical environment, the interior and exterior surface of the earth, rocks and minerals, atmosphere, bodies of water, climate and other phenomena related to changes that affect our planet. Basic principles of space flights, history and geological time. Skills in cooperative work and solution of problems. Requires 30 hours of lecture and 45 hours of lab.

Prerequisite: GEMA 1200.

GEOG 2034 - Introduction to Physical Geography (4)

Study of the natural environment: earth-sun relations, time, space, location, maps; structure of earth, land forms, water bodies; weather and climate; soils, plants and animals. Requires 45 hours of lecture and 30 hours of lab.

GEOG 3014 - Cartography and Aerial and Satellite Photography (3)

Map projections, charts and diagrams; map and air photo analysis and interpretation; map making.

GEOG 3024 - Climatology (3)

Systematic study of the elements of weather, regional analysis of the world's climates.

GEOG 3274 - Economic Geography (3)

Emphasis on the economic location theory and occupations approach to the production and distribution of world products. Population, resources, transportation and primary activities.

GEOG 3284 - Geography of Manufacturing (3)

Geographic location theory in relation to primary, secondary and tertiary production; transport networks and trade areas at varied scales, accessibility. Geographic analysis of major industrial countries.

GEOG 3414 - Geography of Anglo-America (3)

Systematic and regional analysis of geographic conditions of North America north of the Rio Grande.

GEOG 3424 - Geography of South America (3)

Geographic bases for the economic and political development of the continent; its future potentialities.

GEOG 3434 - Geography of Middle America And the Caribbean (3)

Systematic study of the physical environment, population and resources of Mexico, Central America and the Caribbean; regional analysis of their human development.

GEOG 4224 - Political Geography (3)

Geographic analysis of political developments in their spatial distribution; their relationship to environment, resources and technology. Geopolitical patterns of the world.

GEOG 4494 - Geography of Puerto Rico (3)

Geographic bases in Puerto Rican development; land use in Puerto Rico. Requires field trips.

GEOG 4514 - Geography of Europe (3)

Regional study of the continent exclusive of the Commonwealth of Independent States.

GEOG 4524 - Geography of The Commonwealth of Independent States (3)

Geographic bases of the Commonwealth of Independent States and their influence upon the development of these countries.

GEOG 4904 - History of Geographic Thought (3)

Evolution of human knowledge and concepts of the earth through the development of the science of geography. Biographical sketches of outstanding geographers.

GEOG 4934 - Geography of Energy and Mass (4)

Geographic variations in the energy budget, forms, availability and uses of energy; relationships between exchanges and conversions of energy and other natural resources; conservation and management. Requires 45 hours of lecture and 30 hours of lab.

GEOG 4964 - The Arctic and Circumpolar Lands (3)

Comprehensive treatment of the circumpolar countries and Arctic basin. An account of the Arctic and sub-Arctic environment with special emphasis on the unique northern elements. Reviews of recent research in geomorphology, climatology, glaciology, oceanography, wild life, fisheries, transportation, construction, anthropology and community development in the middle north and high Arctic.

GEP-GECF - General Education Program - Christian Thinking

GEP-GECF 1010 - Introduction to the Christian Faith (3)

Study of the Christian religion in a global and pluralistic context, from a social, historical perspective and an ecumenical orientation. Discussion of the Bible's general content, with emphasis on the reflection on the person and the contributions of Jesus of Nazareth, as a model of life and change promoter. Introduction to Christian theology, in accord with other disciplines and currents of thought. Promotes commitment to others, community service and respect for others, congruent with the universal values of the Gospels. Core course.

GEP-GEEC - General Education Program - Entrepreneurial Culture

GEP-GEEC 2000 - Entrepreneurial Culture (3)

Discussion of aspects that foster the development of attitudes and mentality aimed at taking initiatives, identifying opportunities, and addressing challenges of personal, social, and economic settings to promote an entrepreneurial culture. Core course.

GEP-GEEN - General Education Program - English

GEEN - English - Select 6 credits from the GEEN category (6)

Select 6 credits from the GEEN category

GEEN or ENGL - English - Select 3 credits from the GEEN or ENGL categories (3)

Select 3 credits from the GEEN or ENGL categories

GEP-GEEN 1101 - English as a Second Language I: Oral Communication (3)

Development of English as a Second Language auditory and oral communication skills. Practice of formal and informal speech in everyday social and professional situations at local, national, and global settings. Discussion of fundamental aspects of the oral communication process. Reading and writing of simple texts and structures. Development of basic English vocabulary and grammatical structures. Requires completion of a virtual laboratory component. Required course.

GEP-GEEN 1102 - English as a Second Language II: Reading (3)

Development of English as a second language reading skills through the analysis of different types of texts. Use of reading strategies to construct meaning and understanding of readings. Vocabulary acquisition in context. Introduction to the writing process and the paragraph structure. Practice in listening and oral communication skills. Requires completion of a virtual laboratory component.   Required course.

Prerequisite: GEEN 1101.

GEP-GEEN 1103 - English as a Second Language III: Writing (3)

Development of English as a second language basic writing skills. Application of the writing process to produce simple paragraphs and other written texts with varied methods of organization and structure. Improvement of listening, speaking, and reading skills. Acquisition of vocabulary in context. Requires completion of a virtual laboratory component. Required course.

Prerequisite: GEEN 1102.

GEP-GEEN 1201 - English Communication I (3)

Discussion of appropriate use of language in an academic context. Development of oral communication skills to articulate ideas and respond effectively according to context, purpose, and audience. Interpretation of authentic text and multimedia sources through application of critical thinking, reading, and writing. Requires completion of a virtual laboratory component. Required course.

GEP-GEEN 1202 - English Communication II (3)

Application of critical reading skills to analyze texts. Interpretation of readings to explore content from multiple perspectives and to develop informed arguments. Writing of essays and refinement of speaking skills in an academic context. Requires completion of virtual laboratory component. equired course.

Prerequisite: GEEN 1201.

GEP-GEEN 1203 - English Communication III (3)

Development of research skills to foster academic inquiry. Application of critical reading and thinking skills to the research process. Integration of the principles of research writing in the development of a documented essay. Requires completion of virtual laboratory component. quired course.

Prerequisite: GEEN 1202.

GEP-GEEN 2311 - Reading and Writing (3)

Reading and analysis oriented toward essay writing. Emphasis on organizational skills, writing as a process, and the various types of writing modes. Vocabulary acquisition in context. Required course.

Prerequisite: Score of 600 or above on the PAA. Students who have not taken the PAA will follow an alternate placement procedure.

GEP-GEEN 2312 - Literature and Writing (3)

Study of culturally and historically diverse literature through readings in fiction, drama, and poetry. Students will write essays presenting critical readings of literary texts. Required course.

Prerequisite: GEEN 2311.

GEP-GEEN 2313 - Research and Writing (3)

The planning, research process, and writing of academic works. Emphasis on skills for searching, comprehension, evaluation, and effective use of information. Vocabulary acquisition in context. Required course.

Prerequisite: GEEN 2312.

GEP-GEHP - General Education Program - Health and Quality of Life

GEP-GEHP 3000 - Integral Health and Quality of Life (3)

Study of the dimensions of integral health and its effect on psychomotor, cognitive, and affective parameters. Emphasis on the scientific evidence regarding knowledge related to integral health, physical fitness, nutrition, and stress response. Individual and community responsibility in healthy lifestyles is highlighted. Includes physical activity, exercise, recreation, and sports as preventive or therapeutic health strategies. The course provides practical experiences. Core course.

GEP-GEHS - General Education Program - Historical and Social Context

GEHS - Social Studies - Select 6 credits from the GEHS category (6)

Select 6 credits from the GEHS category

GEP-GEHS 2010 - Historical Process of Contemporary Puerto Rico (3)

Analysis of the historical process of contemporary Puerto Rico through the study of its economic, political, social, and cultural transformations that have been transcendental in its development and in its relations with the World. Emphasis on the period covering from the 19th century to the present. Core course.

GEP-GEHS 3020 - Global Society (3)

Study of the global society from a political and economic perspective; and its social, cultural and geographical impact. Emphasis on the analysis of challenges and problems of the contemporary world. Prescribed distributive course.

GEP-GEHS 3050 - Human Formation, Society, and Culture (3)

Analysis of the processes of formation, organization, and adaptation of human beings from the psychological, sociological, and anthropological perspectives. Emphasis on the impact of biopsychosocial systems, cultural processes, and social changes in human behavior. Prescribed distributive course.

GEP-GEHS 4020 - Ancient and Medieval Western Civilization (3)

Analysis of the most outstanding economic, political, social and cultural processes of Western civilization from the appearance of human beings to the end of the Middle Ages. Prescribed distributive course.

GEP-GEHS 4030 - Modern and Contemporary Western Civilization (3)

Analysis of the most outstanding economic, political, social, and cultural processes of modern and contemporary western civilization. Prescribed distributive course.

GEP-GEIC - General Education Program - Information and Computing

GEP-GEIC 1010 - Information and Computing Technologies (3)

Development of skills for processing information by means of the computer. Use of computer programs to establish electronic communication of bibliographic databases, web browsers, operating systems, word processors, electronic graphical presentations, and spreadsheet calculations.

Requires additional hours of virtual open laboratory. Core course.

GEP-GEMA - General Education Program - Mathematics

GEP-GEMA 1000 - Quantitative Reasoning (3)

Study of the set of real numbers, measuring systems, geometry (length, area and volume), equation solving for linear variables that include ratios, proportions, mathematical financial formulas and literal equations. Basic concepts of statistics: frequency distribution, graphs, measures of central tendency, dispersion and probability principles. Requires additional hours of virtual open laboratory.

GEP-GEMA 1001 - Mathematics for Teachers I (3)

Application of the fundamental topics of numeration and operation, data analysis and probability. Emphasis on the development of content through problem solving. Includes communication in mathematics, mathematical reasoning, representation, the integration of mathematics with other subject areas, the integration of the cross-sectional topics of the curriculum, and the integration of available technology as a working tool. This course is designed for elementary school teachers. A minimum grade of C is required to pass this course. Requires additional hours of virtual open laboratory.

GEP-GEMA 1002 - Mathematics for Teachers II (3)

Application of the fundamental topics of measuring, geometry and algebra. Emphasis on the development of content through problem solving. Includes communication in mathematics, mathematical reasoning, representation, the integration of mathematics with other subject areas, the integration of the cross-sectional topics of the curriculum, and the integration of available technology as a working tool. This course is designed for elementary school teachers. A minimum grade of C is required to pass this course. Requires additional hours in a virtual open laboratory.

Prerequisite: GEMA 1001.

GEP-GEMA 1200 - Fundamentals of Algebra (3)

Application of algebra to problem solving, including graphic and symbolic representations. Study of algebraic expressions with whole and rational exponents; and of polynomials, operations, and factoring. Solution of first and second degrees equations, of equations with rational and radical expressions, and of linear inequations. Requires

additional hours of virtual open laboratory.

GEP-GEPE - General Education Program - Philosophical and Aesthetic Thought

GEPE - Humanities - Select 6 credits from the GEPE category (6)

Select 6 credits from the GEPE category

GEP-GEPE 3010 - Art Appreciation (3)

Study of a general panorama of the creative process and the relationship of the artist with his work; the work of art and its importance for the viewer through an appreciative process. Emphasis on the foundations, functions, vocabulary, techniques, and materials of the visual arts. Study of art topics in different periods and the development of the arts in Puerto Rico. Promotes student participation in visits to museums and galleries. Prescribed distributive course.

GEP-GEPE 3020 - Music Appreciation (3)

Study of the multiple functions of music in society through the gradual development of auditory perception. Promotes the appreciation and enjoyment of local and international music, as well as the music from past European societies and those of the Americas, from the 19th century to the present day. Prescribed distributive course.

GEP-GEPE 3030 - Theatre Appreciation (3)

Study of the fundamentals of the performing arts and their incorporation to life in society. Integration of the elements for the analysis of the performing arts, allowing for the development of a critical and evaluative exercise of these. Theoretical revision of theatrical production milestones from its origins to the present, both in dramaturgy as in staging. Prescribed distributive course.

GEP-GEPE 4040 - Ethics and Social Responsibility (3)

Critical analysis on the ethics of responsibility in its multiple dimensions. Emphasis on the meaning of ethical knowledge in the post-modernity context. Includes the study of environmental and socio-political responsibility, the criteria for responsible ethics, as well as the criteria and proposals for an ethic of coexistence and solidarity action. A communitarian service project is required. Core course.

GEP-GESP - General Education Program - Spanish

GESP or SPAN - Spanish - Select 3 credits from the GESP or SPAN categories (3)

Select 3 credits from the GESP or SPAN categories

GESP - Spanish - Select 6 credits from the GESP category (6)

Select 6 credits from the GESP category

GEP-GESP 1021 - Basic Spanish as a Foreign Language (3)

Study of the basic communication skills in Spanish. Emphasis on the acquisition of vocabulary and the learning of basic grammatical structures to achieve an adequate oral and written communication. Reading and writing of simple texts. Requires additional laboratory hours.

GEP-GESP 1022 - Intermediate Spanish as a Foreign Language (3)

Development of communication skills in Spanish. Study of grammatical aspects of the language and vocabulary enrichment for daily use. Reading and writing texts of intermediate complexity. Emphasis on writing descriptive and narrative texts. Requires additional laboratory hours. Prerequisite: GESP 1021.

Prerequisite: GESP 1021.

GEP-GESP 1101 - Literature and Communication: Narrative and Poetry (3)

Development of communicative competence through the interpretation and critical analysis of narrative, poetic, and non-literary texts. Oral and written practices of the different modes of discourse. Emphasis on the development of linguistic competence. Requires additional hours of virtual open laboratory. Core course.

GEP-GESP 1102 - Literature and Communication: Essay and Theatre (3)

Development of communicative competence through the interpretation and critical analysis of essays, plays, and non-literary texts. Oral and written practices of expository and argumentative texts. Emphasis on the development of discursive competence. Requires additional hours of virtual open laboratory. Core course.

Prerequisite: GESP 1101.

GEP-GESP 2023 - Advanced Spanish as a Foreign Language (3)

Study of Spanish as a Foreign Language through diverse readings to promote critical and creative competence. Study of advanced level grammatical structures. Emphasis on the writing of expository and argumentative texts. Continuous practice of oral communication skills. Requires additional laboratory hours.

Prerequisite: GESP 1022 or its equivalen.

GEP-GESP 2203 - Literature and World View (3)

Study of literature to interpret reality. Emphasis on the development of advanced oral and written communication skills. Includes a selection of universal literature works representative of different themes and periods. Requires additional hours of virtual open laboratory. Core course.

Prerequisite: GESP 1102.

GEP-GEST - General Education Program - Scientific and Technological Context

GEP-GEST 2020 - The Natural Environment and The Human Being (3)

Application of the scientific method to the study of human beings' interactions with the natural environment. The scientific perspective of the origin of life and natural selection as a mechanism for evolution is identified. Study of the relationship between human activities and their impact on the environment. Emphasis on identifying actions as problem solutions as well as means for improving the quality of the environment. Prescribed distributive course.

GEP-GEST 2030 - Technology and Environment (3)

Identification of the fundamental concepts of science and the impact of technology on the environment. Distinction of energy sources and their economic and environmental implications. Study of the relationship of climatological phenomena with human activities. Evaluation of the impact of technological development on human beings and their environment. Prescribed distributive course.

GERM - German

GERM 1000 - German Language and Culture (3)

Study of the basic German language and its relationship with culture and daily life in Germany. Emphasis on

intercultural and transcultural aspects in the European Union and internationally.

GERM 1001 - Elementary German (4)

Essentials of German grammar with emphasis on the spoken language.

GERM 1002 - Elementary German (4)

Essentials of Germangrammar with emphasis on the spoken language.

GERM 1011 - German I (3)

Introduction of the German language, through the immersion method. Emphasis on oral communication skills (listening / speaking), reading, writing, and visual interpretation. It requires additional hours of open laboratory.

GERM 1012 - German II (3)

Study of the German language, through the immersion method. Emphasis on oral communication skills (listening / speaking), reading, writing, and visual interpretation. It requires additional hours of open laboratory.

Prerequisite: GERM 1011.

GERM 2021 - German III (3)

Study of the German language at an intermediate level by applying the immersion method. Emphasis on oral communication skills (listening / speaking), reading, writing, and visual interpretation. It requires additional hours of open laboratory.

Prerequisite: GERM 1012.

GERM 2022 - German IV (3)

Study of the German language at an advanced level by applying the immersion method. Emphasis on oral communication skills (listening / speaking), reading, writing, and visual interpretation. It requires additional hours of open laboratory.

Prerequisite: GERM 2021.

GERM 3010 - Diction and Phonetics (3)

Strengthening of oral communicative competence. Study of the sounds, intonation and rhythm of the German language through basic knowledge of phonetics. Oral practice through the reading of short texts, oral presentations and simulation of everyday situations. It requires additional hours of open laboratory.

Prerequisite: GERM 2022.

GERM 3020 - Advanced Writing (3)

Strengthening of written communicative competence in German. Study of discursive genres in German from everyday, academic and professional life. Identification of the registers of the language and the pertinent grammatical elements in order to write clearly and coherently, using an appropriate vocabulary.

Prerequisite: GERM 2022.

GERM 3201 - German Literature I (3)

Discussion of key texts of German literature from the Middle Ages to the seventeenth century and the schools or literary periods that frame them. Emphasis on the study of literary history, critical reading, and literary analysis.

Prerequisite: GERM 3010 and GERM 3020.

GERM 3022 - German Literature II (3)

Analysis of key texts of German literature from the 18th century to the end of the 20th century and of the schools or literary periods that frame them. Emphasis on the study of literary history, critical reading, and literary analysis.

Prerequisite: GERM 3021.

GERM 4010 - German Culture and History (3)

Study of issues related to contemporary German culture from a historical approach. Analysis of texts of various genres, as well as visual arts from an intercultural approach.

Prerequisite: GERM 2022 .

GERO - Gerontology

GERO 2000 - Introduction to Gerontology (3)

Discussion of the fundamental concepts and principles of gerontology. Application during intervention with the elderly adult. The biological, social and psychological aspects of normal aging are emphasized.

GERO 2010 - Neuropsychology of the Elderly Adult (3)

Systematic study of the nervous system of the elderly adult. Analysis of the relation between human conduct and neuropsychology.

Prerequisite: GERO 2000.

GERO 3310 - Ethical and Legal Aspects in Gerontology (3)

Study of the basic ethical and legal aspects in the intervention and the care of the elderly adult, as well as the attitudes and behavior towards this group. Development of awareness of ethical responsibility, protection and respect while offering social and health services. Analysis, discussion and application of ethics in situations related to client care.

GERO 3311 - Loss and Death (2)

Exploration of theories, approaches and practices related to the loss, pain, death and mourning in the elderly adult. Study of the stages of death and the intervention strategies considering the cultural aspect.

Prerequisite: GERO 2000.

GERO 3312 - Trends and Controversies in Elderly Adult Care (2)

Analysis of the trends and controversial matters related to the elderly adult. Effect on the health care and social services provided to this population. Principles of research in gerontology are included.

Prerequisite: GERO 2000.

GERO 4313 - Alterations of the Health Cycle - Disease in the Elderly Adult (3)

Study of the physiopathology in acute and chronic physical and psychological alterations common in elderly adults. Application of the nursing process in the prevention of disease, the promotion, maintenance and restoration of health of the elderly client. Use of research findings. Course is only for Nursing students interested in completing the Prerequisites of the Minor in Gerontology.

Prerequisite: GERO 2000, 2010, 3310, 3311, 3312. Corequisite: GERO 4915.

GERO 4915 - Clinical Practicum in Gerontology (2)

Application of the basic concepts of gerontology, the ethical, legal, and research aspects and trends in the care of the elderly adult with acute and chronic alterations of health in structured and not structured scenarios. Assessment of the nursing process as a means of providing nursing care. The biopsycosocial care within a multidisciplinary health team is considered. Sixty hours of practice are required.   Course is only for Nursing students interested in completing the Prerequisites of the Minor in Gerontology.

Corequisite: GERO 4313.

GERO 4916 - Practice in Social Gerontology (2)

Application of the basic concepts of gerontology, the ethical, legal, and research aspects and trends in the care and social services of the elderly adult in care scenarios. The biopsycosocial care within a multidisciplinary health team is considered. Sixty hours of practice are required. Course is only for Social Work students interested in completing the Prerequisites of the Minor in Gerontology.

Corequisite: GERO 497_.

GERO 4970 - Seminar in Social Gerontology (3)

Analysis of the conditions of marginalization and discrimination to which the elderly are subjected. Study of the social policies and how they comply with guaranteeing social justice to this population. Course is only for Social Work students interested in completing the Prerequisites of the Minor in Gerontology.

HCAD - Health Services Adminiatration

HCAD 1100 - Fundamentals in Health Care Service (3)

Discussion of the health care system, its critical issues and its core challenges. Examination of the history of the health system, the governmental role, public policy, systems models, levels of service provision, system financing and the impact of technology.

HCAD 2100 - Introduction to Public Health Policy (3)

Discussion of the concept of public health, its importance and its future perspective. Description of the process of creating public health policy. Analysis of the disparity in access to health.

Prerequisite: HCAD 1100.

HCAD 2200 - Ethical and Legal Aspects in the Health Care Service (3)

Understanding of ethical concepts and their application to the field of health care. Discussion of the ways of directing ethical decisions and the decision-making process, as well as, of administrative and biomedical ethical issues in the provision of health services. Description of the legal system with the purpose of discussing the fundamental principles of the law, the principles of responsibility of health professionals in the different relationships with health care, breach of contract, intentional crimes (tort) and non-offenses Intentional, defenses and limitations of

professional responsibility.

Prerequisite: HCAD 2100.

HCAD 3000 - Information Technology and Communication in Administration of Healthcare (3)

Understanding the impact of information and communication technology on health services. Emphasis on the process of preparing electronic medical records and electronic invoices of medical offices and hospitals by applying the corresponding federal and state laws. Knowledge of the specifications of the different health insurances that are billed. Analysis of other emerging technologies and their impact, as well as current and future challenges in the administration of health services in Puerto Rico.

Prerequisite: GEIC 1010 and HCAD 2200.

HCAD 4000 - Financial Aspects in the Healthcare Service (3)

Discussion of accounting in nonprofit, for profit and government health care organizations. Preparation of the financial statements of these organizations. Identification of sources of income. Preparation of the different budgets used by health organizations. Discussion of the prudent and safe management of cash, of the financing of these organizations, the proper administration of the income cycle and the management of financial risk.

Prerequisite: ACCT 1162 and FINA 2100.

HCAD 4200 - Integrated Seminar (3)

Integration of knowledge, skills and attitudes required as a health services administrator. Emphasis on strategic planning, financial matters, technology, policies, legal and ethical issues related to health services. 15 hours are required on a health services organization.

Prerequisite: Have approved all major courses.

HESC - Health Science

HESC 3005 - Human Development (3)

Analysis of the developmental processes of the human life cycle from the biological, psychological and social perspective, with emphasis on the adult. Includes the relation of the physical, emotional and social aspects of development and their importance in achieving a full and productive life.

HESC 3010 - Essential Concepts in Health Sciences (3)

Analysis of the fundamental principles of the health sciences. Discussion of the ethical, and legal considerations, regulatory agencies and of the trends and controversies in offering health services.

HESC 3020 - Health and Illness Throughout the Life Cycle (3)

Study of diseases throughout the life cycle, integration of technology in the diagnosis and therapeutic modalities and their economic impact on health services. Analysis of congenital anomalies, disabling conditions, teenage pregnancy, suicide, accidents on the job, conditions and phases unique to women, unique conditions of men, health/well-being of elderly in Puerto Rico. Review of the psychological aspect of disease and disability. Includes the process of death and dying, the crisis process, ethical controversies on euthanasia and prolongation of life through mechanical devices.

HESC 4010 - Research Methods in Health Sciences (3)

Analysis of the methodological basis of scientific research. Includes the theoretical base and development of skills to interpret and critique research reports. Emphasis on the identification of possible problems and processes for research.

Prerequisite: HESC 3030.

HESC 4015 - Quality Guarantee and Improvement (3)

Theoretical and philosophical frames for improving the quality of health services. Discussions of models such as: Total Quality Management, Quality Assessment, and Continuous Quality Improvement. Analysis of the latest trends in the guarantee and improvement of quality.

HESC 4030 - Collective Health Promotion (3)

Study of three main areas: strategies for promotion of health in the community, protection of environmental health, health services and resources. Includes the identification of group or populational diseases, correlates risk factors with the disease, factors protecting against disease and health indicators. Analysis of the role of the health educator and care provider in the communities. Integration of principles for disease prevention

HESC 4050 - Planning and Marketing Health Services (3)

Discussion of the marketing system and the strategy components of promotion from the perspective of providing health services. Design, implementation, and

control of marketing programs of services taking into consideration the social responsibility of the health agency. Includes ethical principles that regulate the marketing field.

HESC 4055 - Methods and Techniques in Teaching Health Science (3)

Theories of instruction applied to the planning and development of teaching health sciences. Analysis, use of methods and techniques of teaching, selection and preparation of materials for teaching integrating technological resources, innovation, and creativity.

Prerequisite: EDUC 2032.

HESC 4060 - Design and Development of an Educational Health Plan (3)

Diagnosis of needs, formulation of goals, selection of content, planning and evaluation in the instruction of health sciences. Techniques for the evaluation of learning. Emphasis in the education of clients in the clinical scenario, based on the assessment of the state of physical and emotional health, and the phase of growth and development.

Prerequisite: HESC 4030, EDUC 2032.

HESC 4065 - Auditing Principles Applied to Health Services (3)

Principles and concepts of auditing applied to the health systems in Puerto Rico. Emphasis on internal control systems.

HESC 4913 - Internship (4)

Supervised practical experience in an educational scenario related to the health field. Includes the application of knowledge contained in the courses with an educational component. Requires a total of 90 hours of practice and 30 hours of seminar in a semester. Prerequisites: Have passed the major Prerequisites and those of the subspecialization.

HESC 4917 - Professional Seminar (3)

Analysis of administrative operations in a health services facility to develop an improvement plan. Application of scientific research methods related to health service environments. 30 lecture hours and 30 laboratory hours are required.

Prerequisite: have approved 24 core credits and 12 major credits.

HIST - History

HIST 1020 - The AncientWorld (3)

Economic, social, political and cultural changes experienced by humanity from its appearance on Earth up to the fifth century of the Christian Era.

HIST 1030 - The Medieval World (3)

Economic, social, political and cultural changes experienced by humanity from the fifth to the fifteenth century of the Christian era.

HIST 1040 - The Modern World (3)

Economic, social, political and cultural changes that the western world has experienced from the 15th century Christian era to the 17th century.

HIST 1050 - The Contemporary World (3)

Economic, social, political and cultural changes the western world has experienced from the 18th century to the present.

HIST 2010 - Latin American Indigenous Cultures (3)

Study the indigenous cultures of Latin America, including the Antilles, from the pre-Columbian era to the present. Particular attention is paid to the study of the world view of these cultures and how they first confronted the Europeans and then the dominant republican groups.

HIST 2020 - Spain and Portugal I (3)

Economic, social, political and cultural transformations experienced by the inhabitants of the Iberian Peninsula from the arrival of the first settlers to the fifteenth century of the Christian era.

HIST 2025 - Spain and Portugal II (3)

Economic, social, political and cultural transformations experienced by the inhabitants of the Iberian Peninsula from the fifteenth century to the present.

HIST 2030 - Colonial Latin America (3)

Interpretation of the economic, social, religious, political and cultural transformations experienced by Latin America from the time of its discovery and conquest to its struggle for independence.

HIST 2035 - Latin America Since its Independence (3)

Economic, social, political and cultural transformations experienced by Latin America, from the wars for independence to the present.

HIST 2040 - The Caribbean Since the 17th Century (3)

The Caribbean region, touching on key aspects of development in the 17th century when this region entered the world economy as an important producer of sugar and other tropical products. Emphasis is placed on the Haitian Revolution and its importance in the political and economic development thereafter. Emphasis on the relationship between the Caribbean and Puerto Rican history.

HIST 2045 - The Hispanic Caribbean from the 15th to the 18th Centuries (3)

Discussion of the development of the Spanish colonies in the Caribbean between the 15th and 18th centuries. Emphasis on socioeconomic, political, religious and cultural aspects.

HIST 2050 - Puerto Rico I (3)

Economic, social, political and cultural transformations experienced by Puerto Rico through an analysis of historical documents and histographical sources. Covers the history of Puerto Rico from the arrival of the first settlers to 1810.

HIST 2055 - Puerto Rico II (3)

Economic, social, political and cultural transformations experienced by Puerto Rico through an analysis of historical documents and histographical sources. Covers the history of Puerto Rico from 1810 to the present.

HIST 2060 - Introduction to Oral History (3)

Introduction to the study of oral history as a work tool in social sciences in general, as well as in history in particular and its application in current society. Includes research experiences.

HIST 2210 - The Computer in Historical Research (3)

Use of the computer in historical research. Includes an introduction to computer technology, use of databases, with an emphasis on the Internet and commercially available programs related to historical research. Study of examples of applying computers to research, including the development of a research exercise by the students. (No previous knowledge of computers is required).

HIST 2220 - Puerto Rico and the Insular Caribbean in the 20th Century (3)

Political, economic and social development of the insular Caribbean in the 20th century from a perspective of Puerto Rico as a Caribbean country. Course emphasis on the process of dissolution of the English, French and Dutch colonial empires, as well as North American presence in the Caribbean.

HIST 3010 - Historical Process of the United States of America (3)

Survey of political, social, economic and cultural events; institutions and movements of significance in the development of the United States.

HIST 3020 - Europe I (3)

Economic, social, political and cultural transformations contributing to the formation of Europe from the fifteenth to eighteenth century.

HIST 3025 - Europe Ii (3)

Economic, social, political and cultural transformations contributing to the formation of Europe from the nineteenth century to the present.

HIST 3030 - The Muslim World (3)

Introduction to the study of the Muslim world, its ethnic origin and its territorial expansion after the founding of Islam in the 7th century AD, and its diffusion throughout North Africa, Spain and the Orient. Political, religious and cultural aspects and their impact on the world are esamined.

HIST 3040 - Africa (3)

Analysis of the economic, social, political and cultural transformations contributing to the formation of contemporary Africa. Emphasis on the partition of Africa by European powers and the development of the current African states.

HIST 3050 - United States I (3)

Economic, social, political and cultural transformations contributing to the establishment of the United States as a nation, from its European colonization to the Civil War.

HIST 3055 - United States II (3)

Economic, social, political and cultural transformations experienced by the United States from the Reconstruction Period to the present.

HIST 3060 - Asia (3)

Analysis of the economic, social, political and cultural transformations contributing to the formation of the current Asian states. Emphasis on the European penetration into India, China and other regions of Asia, the rise of the Japanese Empire, the Chinese Revolution and the struggles

for independence following World War II. Analysis of the economic impact of Asis on the globalized world.

HIST 3070 - Russia until 19th Century (3)

Economic, social, political and cultural transformations that the inhabitants of the Russian territories have experienced from pre-history until the decade of the 1860s.

HIST 3075 - Russia During the 19th and 20th Centuries (3)

Economic, social, political and cultural transformations the inhabitants of the Russian Empire and Soviet Union territories have experienced from the decade of 1860 until the present.

HIST 3110 - Research in History and Puerto Rican Literature (3)

Analysis and application of the process of historical and literary research of Puerto Rico. Integration of the historical and literary knowledge from the eighteenth century to the present.

Prerequisite: Have approved 12 credits of the minor.

HIST 3210 - The Second British Empire (3)

The British Empire from the end of 18th century to its dissolution. Economic, social and political aspects that allowed for territorial expansion since the 18th century are examined as well as the prevailing conditions in the 20th century that influenced independence movements.

HIST 3220 - Mexico Since its Independence (3)

History of the political evolution and the ideological struggles in Mexico since its independence to the present.

HIST 3225 - The Viceroyalty of the New Spain (3)

Analysis of the meeting of two civilizations. Emphasis on the political, institutional, religious, socioeconomic and cultural developments of the viceroyalty of the New Spain from 1521 to 1810.

HIST 3230 - The Era of Revolutions 1774 -1824 (3)

Analysis of the political, religious and socio-economic transformations as consequences of the revolutions in North America, France, Haiti and Spanish America. The focus will be on the ideas of the Enlightenment.

HIST 397_ - Special Topics (3)

Special Topics in History

HIST 4020 - Historiography (3)

Study of historical thought process found in the most outstanding texts dating from antiquity to the present. Modern conditionsof history are stressed.

HIST 4110 - Historical Problems (3)

Intensive study of a historical problem in one of the areas or periods presented in catalog courses or in a historical area that goes beyond geographical or chronological limits. The particular problem to be analyzed by the course and the prerequisites will be announced by the department each time the course is offered.

HIST 4210 - Historical Research (3)

Application of research methods and techniques used by historians. Selection of a topic and the research and elaboration of this subject using an integrated vision of the use and management of primary and secondary sources. Search of external files by the use of libraries and virtual files. Oral and written presentation of a principle monographs that shows the application of one or various techniques of research.

Prerequisite: HIST 4020.

HIST 4220 - Brazil (3)

History of the political, social and economic development of Brazil under Portuguese rule and as an independent country. Its role in the international community is emphasized.

HIST 4230 - Spanish American Institutions Before Independence (3)

Development of institutions established by Spain in their colonies: administrative, economic and legal policies and the Land Owners ("El Patronato"). The legacy and influence of these on present institutions is examined.

HIST 4240 - Countries of the Southern Cone (3)

Comparison of the political, economic and social development of Argentina, Uruguay and Chile from independence to the present. Analysis of the differential factor which surfaced due to the impact of European immigration on the development of these countries, seen in the context of America and the impact of the European Community.

HIST 4250 - Canada (3)

The political, economic, social and cultural development since Canada's organization as a power in 1867. The evolution of its constitution, its relationships as an

independent country and its position as one of the top seven economic powers of the world are analyzed.

HIST 4260 - Relations of Church and State in Colonial America (3)

Comparison and interpretation of the relations of the Church and the State in Colonial America from 1492 to 1825 together with its historical development.

HIST 4299 - Study-Travel Seminar (3)

Panoramic study from a political, economic, social and cultural point of view of the history of the countries to be visited. This course is required to participate in the trip.

HIST 4300 - Study-Travel (3)

Visit to the countries studied during the previous seminar to enhance, on site, the acquired knowledge of their political, economic, social and cultural development.

HMGT - Restaurant and Food Services Administration

HPER - Health Physical Education and Recreation

HPER 1000 - History and Foundations of Recreation (3)

Discussion of the historical development of recreation. Emphasis on transcendental historical events and their contributions to recreation throughout different eras. Study of the origin, the development of services and related topics. Introduction to the fundamentals and theories related to recreation, play, and the principles of the discipline. Examination of the importance of recreation in the solution of current social problems.

HPER 1870 - Themes in Health, Physical Education and Recreation (2)

Individual, dual, team sports and dance; physical conditioning, weight control; simple games. Two hours of theory-practice per week.

HPER 1880 - Themes in Health, Physical Education and Recreation (2)

Individual, dual, team sports and dance; physical conditioning, weight control; simple games. Two hours of theory-practice per week.

HPER 1890 - Recreation for Older Adults (3)

Discussion of the fundamentals of recreation for older adults. Includes the components of non-profit organizations, the private sector and the government. Investigation of current and emerging trends in the field of recreation.

Prerequisite: HPER 1890.

HPER 2010 - Planning, Organization and Implementation of Recreational Activities for Older Adults (3)

Analysis of the planning process, organization and implementation of recreational activities for older adults. Application of the principles for needs evaluation and development of recreational activities.

Prerequisite: HPER 1890.

HPER 2020 - Physical Activity and Sports Training for Older Adults (3)

Analysis of the basics of sports training for older adults. Discussion of the general characteristics of aging and exercise prescription for the elderly. Study of the pathologies associated with the aging process and its effect on physical and sports training.

Prerequisite: HPER 1890.

HPER 2030 - Philosophy and Basic Principles of Health (3)

Critical analysis of the philosophical development of basic health principles. Includes the study of degenerative diseases, physical and mental limitations, transmissible diseases, defenses of the body and immunization programs.

HPER 2140 - Experiences in Movement I (2)

Theory and practice of the fundamentals and related concepts of human movement, basic motor skills and basic gymnastics. Study of physical activity and games as means of discovering the attributes of the individual. New, traditional and creative games.

HPER 2150 - Health and Physical Education Program in The Elementary School (3)

Philosophy of the health and physical education program at the elementary level. The health phase includes instruction, services and healthful school living; the physical education phase covers teaching simple games and rhythmic, self-exploration and self-discovery activities.

HPER 2210 - Fundamentals of Physical Education and Sport Technology (3)

Study of the philosophical, social and historical principles of physical education and sport technology. Identification of the importance of exercise, physical activity and recreation for the individual and collective well-being, and for populations with special needs. Discussion of the professional role in the discipline.

HPER 2220 - Experiences in Movement II (2)

The rationale, the theory and practice of physical and recreational activities in nature, aquatic activity including swimming and aerobic activities.

HPER 2230 - School Health Education (3)

Methods and materials for teaching health in the elementary schools; role and responsibilities of the teacher in the school health program.

HPER 2270 - Kinesiology and Functional Anatomy (3)

Structural-functional analysis of the bony-muscular and joint system and of and the bio mechanic factors that affect human movement. Includes the study of mechanical kinesiology in exercise and in sport skills. Provides practical experience.

HPER 2320 - First Aid and Personal Safety for Children, Youth and Adults (2)

Principles and techniques of first aid for offering primary assistance in the home, at school, at work, on the road, and in recreation and sports. The application of preventive taping, massages, therapeutic methods and strategies of rehabilitation for rapid recuperation. Includes practical experience.

HPER 2330 - First Aid and Personal Safety for Children, Youth and Adults (3)

Principles and techniques of first aid for offering primary assistance in the home, at school, at work, on the road, and in recreation and sports. The application of preventive taping, massages, therapeutic methods and strategies of rehabilitation for rapid recuperation. Includes practical experience.

HPER 2540 - Social Recreation (3)

Theoretical and practical aspects of social recreation; planning, organizing and directing activities and programs in social recreation; emphasis on leadership techniques.

HPER 2541 - Seminar (3)

Integration of knowledge, skills and attitudes required of a recreational leader. Emphasis on the planning, organization and evaluation of recreational activities for older adults. Requires 15 hours in an older adult scenario.

HPER 3010 - Sports Psychology (3)

Research and theories related to the mental, emotional and psychological aspects of participants in athletic activities and in physical education.

HPER 3040 - Legal Foundations in Sports (3)

Analysis of the laws of Puerto Rico applicable to the sports industry. Legal implications in the practice of sports training and in the administration of a sports company.

HPER 3050 - Introduction to the Prevention and Management of Injuries (3)

Study of preventive and therapeutic strategies for the treatment of acute and chronic injuries in athletes or in individuals that practice exercises. Emphasis on the application of bandages, the use of protective equipment and safety measures.

Prerequisite: HPER 2270.

HPER 3051 - Therapeutic Massages (3)

Discussion of the principles that govern the application of different techniques of therapeutic massage for sportsmen and people who do exercises. Emphasis on the variety of practical experiences with typical injuries in sportsmen.

Prerequisite: HPER 2270.

HPER 3111 - Elementary Gymnastics (2)

Tumbling and basic exercises. Includes an introduction to gymnastic apparatus.

HPER 3112 - Advanced Gymnastics (2)

Tumbling and exercises at the advanced level. Use of gymnastic apparatus and practice of gymnastic routines.

Prerequisite: HPER 3111.

HPER 3160 - Educational and Recreational Games in the Curriculum for the Elementary Level (3)

Analysis of the importance of games as tools for the cognitive, emotional, social and physical development of the child. Design and development of educational activities through games with the utilization of apparatus and educational implements for integrating curriculum.

Experience in recreational activities, simple, creative and innovative games without the use of implements, cooperative games and lead-up activities for the students from K-6. Requires practical experience in the school or in educational centers.

HPER 3220 - Theory and Design of Physical Education Programs for the Elementary Level K-6 (3)

Review of the basis of the discipline, contemporary focuses and trends in curriculum models most relevant for grades K-6. Skills for curriculum development, design and implementation and the evaluation of programs. Laws and related regulations and national and state norms. Writing of curriculum documents applicable to teaching.

HPER 3230 - Theory and Design of Physical Education Programs Level 7-12 (3)

Review of the basis of the discipline, contemporary focuses and trends in curriculum models most relevant for grades 7-12. Skills for curriculum development, design and implementation and the evaluation of programs. Laws and related regulations and national and state norms. Writing of curriculum documents applicable to teaching.

HPER 3310 - Experiences in Movement III (2)

Experience leading to the development of corporal expression and knowledge, the values and mastery of skills related to dancing and rhythmic activities.

HPER 3330 - Fundamental Skills and Training in Team Sports IV (3)

Analysis of the mechanics of the different skills that affect sports. Includes the study of the methods of physical-sport training to develop optimal competitive performance (volleyball, basketball, softball, soccer).

HPER 3340 - Skills in Team Sports II (3)

Analysis and development of basic skills for teaching soccer and softball.

HPER 3350 - Motor Learning and Analysis of Movement (3)

Theory of motor learning. Descriptive and qualitative analysis of human movement, and the mechanisms which influence the neuromuscular system. Requires practical experiences K-12.

HPER 3360 - Fundamental Skills and Training in Individual Sports V (3)

Analysis of the mechanics of the different skills that affect sports. Emphasis on the study of the methods of physical-

sport training to develop optimal competitive performance (table tennis, field tennis and track and field).

HPER 3370 - Skills in Individual Sports II (3)

Analysis and development of basic skills for teaching archery, badminton and gymnastics.

HPER 3380 - Evaluation of Injuries and Design of a Program of Physical Rehabilitation in Individual and Team Sports (3)

Study of the evaluation protocols for athletic traumatism. Emphasis on physical rehabilitation based on the needs of the injured person. Provides practical experience. Study of the evaluative protocols for the athletic traumatism. Emphasis in the physical rehabilitation based on the needs of the injured person. It provides practical experience.

Prerequisite: HPER 3050.

HPER 3430 - Personal and Community Health and Safety (3)

The integration of the concepts of a healthy lifestyle, personal safety, stress management, nutrition and prevention in the use of alcohol and drugs. Analysis of the importance of physical activities including sleep and rest.

HPER 3450 - Recreational Experiences (2)

Methods, materials and techniques for teaching recreational activities. Includes outdoor experiences.

HPER 3470 - Motor Therapy for Children with Disabilities (3)

Analysis of the principal motor problems affecting the performance of children with disabilities. Design of adequate therapeutic activities. Special attention is given to experiences for the development of mobility in children. Field experiences provided.

HPER 3475 - Theory and Design of Programs for Special Populations (3)

Review of the basis of the discipline, contemporary focuses and trends in curriculum models most relevant for special populations. Skills for curriculum development, design and implementation and the evaluation of programs. Laws and related regulations and national and state norms. Writing of curriculum documents applicable to particular scenarios.

HPER 3480 - Nutrition in Sports, Exercise and Physical Activity (3)

Study of the nutritional needs of sportsmen and individuals

that practice exercises and physical activities. Includes the programing of nutritious substances in active people and in athletes.

HPER 3495 - Principles of Therapeutic Recreation (3)

Study and application of principles for developing therapeutic activities. Analysis of the most used therapeutic models for special populations. Organization of therapeutic recreational activities. Field experiences provided.

HPER 3800 - Trends and Issues in Athletic Training (3)

Analysis of the different problems encountered in athletic training. Readings, demonstrations and discussions related to the work of athletic coaches and the legal implications of fulfilling their responsibilities.

HPER 3900 - Human Sexuality (3)

Basic principles of human sexuality, with attention to the biological, psychosocial and cultural aspects, including family planning. Study of the activities, beliefs and sentiments with respect to human sexuality directed to foment the prevention of sexually transmissible diseases and the individual's responsibility in sexual conduct.

HPER 397B - Games and Sports for Disabled Students (3)

Analysis of the meaning of the dames and sport as a tool for the cognitive, emotional, social, and physical development of students with disabilities. Development of the knowledge of a variety of games and sports appropriate for this population. Topics on adaptation and modification of games and sports, are covered, as well as systems of clasification, rules and strategies. Selection of materials and technological assistance. Requires practical experiences.

HPER 4020 - Administration of Physical Education, Wellness, Health and Sport Programs (3)

Analysis of the administrative processes involved in the organization of exercises programs and sport activities. Includes the main theories of management and their application in physical education, in athletic scenarios and in physical-sport training.

HPER 4110 - Evaluation, Assessment and Research in the Teaching and Learning of Physical Education K-6 (3)

Knowledge, interpretation and application of evaluation concepts, measurement, assessment and research and their relationship with the evaluation process in physical

education at the elementary level. Analysis, design and application of techniques and evaluation instruments, theoretical and practical tests. Includes the study of technology in the area. Provides practical experience.

HPER 4120 - Evaluation, Assessment and Research in the Teaching and Learning of Physical Education 7-12 (3)

Knowledge and application of evaluation concepts, measurement, assessment and research and their relationship with the evaluation process in physical education at the secondary level. Analysis, design and application of techniques and evaluation instruments, theoretical and practical tests. Includes the study of technology in the area. Provides practical experience.

HPER 4130 - Evaluation, Assessment and Research in the Teaching and Learning of Adapted Physical Education (3)

Knowledge and application of evaluation concepts, measurement, assessment and research and their relationship with the evaluation process in physical education for children with disabilities. Analysis, design and application of techniques and evaluation instruments, theoretical and practical tests. Includes the study of technology in the area. Provides practical experience.

HPER 4140 - Assessment, Evaluation and Research of Teaching and Learning in School Health Education (3)

Study of the concepts of evaluation, measurement, assessment and investigation and their relation with the educational process in health education. Analysis, design and application of evaluation techniques and instruments, theoretical tests and practices. Includes the use of the technology related to the area. Provides practical experience.

HPER 4170 - Physiology of Human Movement (3)

The physiological changes (responses and adaptations) that occur in the human organism as a result of physical activity. Physiology of muscular contraction, cardiovascular system and the respiratory system and their function in sport activities. Application to different populations. Provides laboratory experience.

HPER 4180 - Measurement, Evaluation and Investigation of The Development of Physical Fitness and Its Components (3)

Application of the concepts of measurement, evaluation, research and their relations with medical fitness and the components of health and motor capacity. Analysis, design

and application of techniques and evaluation and practice instruments.

HPER 4200 - Techniques and Skills for the Personal Trainer (3)

Analysis of the client's profile, which includes the components of physical fitness. Creation of a program of personal training that responds to the interests and needs of the participant. Emphasis on the use of the guides and standards of the organizations that regulate the practices of personal training. Provides practical experience.

Prerequisite: HPER 2270.

HPER 4305 - Sport Training Methodology (3)

Study of the scientific principles for physical-sport training to develop an optimal athletic performance. Emphasis on the programing of the training systems for athletes or for those that participate in sports with recreational aims. Provides practical experience.

HPER 4306 - Integrated Periodization of Physical Sports Training (3)

Study of the design and planning of the cyclical structure of a sports physical training program. The different physical, mental, technical, tactical and theoretical training preparations are discussed.

HPER 4308 - Design of Exercise Programs (3)

Application of the principles for planning and design of programs of preventive physical training for diverse populations. Emphasis on the basic principles and the methodologies involved in the cardiopulmonary tests of maximum and sub-maximum effort.

Prerequisite: HPER 4170.

HPER 4310 - Functional Training Methodology (3)

Study of the integrated approach for physical-sport training. Application of the components of functional training to improve sport performance and the prevention of injuries. Discussion of the specific exercises that help athletic, daily and occupational activities. Provides practical experience.

HPER 4313 - Methodology for Muscle Fitness Training (3)

Planning and design of the program for muscle fitness training. Includes resistance training aimed at developing muscle strength, tolerance, and power. Study of the training principles that govern resistance programs, as well as the quantification of their acute and chronic variables.

HPER 4315 - Fundamentals of Coaching (3)

Analysis of the theoretical bases, philosophical and managerial principles of sports coaching. Evaluation of the psychosocial, pedagogical, ethical-legal and leadership competencies that a coach must have. Study of the process related to coaching activities for sports.

HPER 4320 - Coaching and Officiating Soccer (2)

The skills, basic drills, conditioning activities, coaching techniques, principles of team selection and theoretical knowledge of soccer.

HPER 4330 - Coaching and Officiating Basketball (2)

The skills, basic drills, conditioning activities, coaching techniques, principles of team selection and theoretical knowledge of basketball.

HPER 4340 - Coaching and Officiating Baseball (2)

The skills, basic drills, conditioning activities, coaching techniques, principles of team selection and theoretical knowledge of baseball.

HPER 4350 - Coaching and Officiating Track and Field (2)

The skills, basic drills, conditioning activities, coaching techniques, principles of team selection and theoretical knowledge of track and field.

HPER 4360 - Coaching and Officiating Volleyball (2)

The skills, basic drills, conditioning activities, coaching techniques, principles of team selection and theoretical knowledge of volleyball.

HPER 4370 - The Teaching of Physical Education for Special Populations (3)

Study and application of methodologies for teaching special populations, adaptation of activities, equipment and materials, study of related laws, evaluation and elaboration of the required documents for the physical education class. Provides practical experience.

HPER 4407 - Movement Experiences (3)

Movement patterns commonly used by children in self-discovery; relation of the body to space, applying the elements of time, weight, balance and force.

HPER 4441 - Practicum in Athletic Training I (3)

Clinical experience supervised by professional personnel for the application of the principles of prevention and handling of injuries. Includes participation in the

prescription of exercise, as well as in the design of physical-sport training programs. Includes the development of an emergency plan in practices and games, and in record keeping. Requires a minimum of 135 hours of practice.

Prerequisite: HPER 3380 and 4308.

HPER 4442 - Practicum in Athletic Training II (3)

Use of devices, protective equipment and machines of physical preparation in the clinical experience. Emphasis on participation in the design and supervision of physical-sport training programs. Requires a minimum of 135 hours of practice.

Prerequisite: HPER 4441.

HPER 4444 - Clinical Experiences in Training (3)

Practical experience in different sport scenarios and service centers. Participation in the planning and design of programs of training directed towards the prevention of chronic diseases and/or the improvement of performance in the sport. Implementation of ergometric tests, muscular strength and flexibility, as well as the assessment of corporal composition. One hundred five hours of practice are required.

Prerequisite: HPER 4308.

HRMT - Hotel and Restaurant Manager

HRMT 1200 - Introduction to the Tourism and Hospitality Industry (3)

Description of the general characteristics of the tourism and the hospitality industries and the basic concepts related to the types of companies within them. Emphasis on the organizational aspects and the typical operational procedures of these organizations. Discussion of the impact of these industries in the economy, the society and the natural environment.

HRMT 1300 - Introduction to Food and Beverages Management (3)

Study of the organization of businesses dealing with foods, drinks, and of foodserrvice organizations. Discussion of the application of managerial functions in food services. Association of basic menus with different segments of the market and types of companies. Description of the equipment for businesses of foods and drinks. Discussion of the health and security Prerequisites in the kitchen. Discussion and application of culinary conversions and

food cost estimates.

Prerequisite: GEMA 1200.

HRMT 1301 - Production Lab and Basic Food Services (2)

Use of equipment in the preparation of foods and beverages. Explanation of food production and service. Includes the presentation and the process of table service. Emphasis on the development of the basic concepts of selection and preparation of food: salads, vegetables, cereals, use of spices and plates with animal protein. Application of cooking conversions in preparing food products. Requires 60 hours of lab.

Prerequisite: HRMT 1300.

HRMT 2100 - Professional Communication Skills in English for the Hospitality and Tourism Industry (3)

Development of the necessary English communication skills for the hospitality and tourism industry, with emphasis on oral expression. Requires 45 hours of lecture-lab. This course must be passed with a minimum grade of B.

Prerequisite: Have approved the nine credits of any level of English of the General Education Program (GEP).

HRMT 2101 - Conversational Italian For Tourism and Hospitality (3)

Development of basic Italian vocabulary to provide services in the tourism and the hospitality industry. Requires 45 hours of lecture-lab.

HRMT 2102 - Conversational French For Tourism and Hospitality (3)

Development of basic vocabulary in French to provide services in the tourism and the hospitality industry. Requires 45 hours of lecture-lab.

HRMT 2103 - Conversational German For Tourism and Hospitality (3)

Development of basic vocabulary in German to provide services in the tourism and the hospitality industry. Requires 45 hours of lecture-lab.

HRMT 2200 - Introduction to Marketing in The Hospitality Industry (3)

Discussion of the principles and basic concepts of marketing applied to the hospitality industry. Includes the organization, planning and the marketing strategies for services in the context of lodging, foodservice and other

tourist related businesses. Study of the variables controlled by a company and those beyond its control. Analysis of consumer behavior, the modern marketing trends, segmentation and location of markets, and information systems.

HRMT 2302 - Production Lab and Advanced Food Services (2)

Use of equipment in the preparation of food and brverages in large amounts. Emphasis on the development of advanced concepts of food selection and preparation of all categories, which includes pastry and dessert products. Food service in the context of a restaurant. Practice in cooking conversions, estimates of food costs and control of profits. Requires 75 hours of lab.

Prerequisite: HRMT 1300, 1301.

HRMT 2500 - Human Resources Management in the Hospitality Industry (3)

Analysis of the effectiveness of the policies and practices related to human resources management by means of lectures, discussions and cases studies. Emphasis on recruitment, selection, placremernt and development of human resources. The study of practices related to hotel industry personnel is stressed.

Prerequisite: HRMT 1200.

HRMT 2600 - Drinks Management and Service (3)

Application of the managerial functions in commercial beverages operations. Review of the new trends in beverages businesses, that include coffee, tea, natural juice, wines, beers, and frozen drinks, among others. Planning, design and valuation of menus. Valuation of the highest quality service and the responsible serving of alcoholic drinks. Practice in control of portions, estimates of costs and control of profit for businesses serving drinks.

Prerequisite: HRMT 1200.

HRMT 2650 - Purchasing Systems and Inventory Control (3)

Description of purchasing, distribution and selection systems. Study of product quality and available specialized equipment for different food services. Discussion of different types of storages and inventory controls.

HRMT 2800 - Restaurant Development and Management (3)

Development of food and beverages concepts for restaurants. Analysis of techniques and practices related to operation management and cost control involved in the planning and operation of a restaurant. Evaluation of managerial functions in a restaurant setting. Discussion of the contribution of foodservice operations in the economic and entrepreneur development in a country.

Prerequisite: HRMT 2302.

HRMT 2850 - Restaurant Management (3)

Application of management skills to analyze, plan, implement and control the operation of a restaurant. Identification and application of international concepts in managing this type of establishment. Requires additional time in an open lab.

Prerequisite: ACCT 1161, HRMT 2650 y HRMT 2800.

HRMT 2915 - Practicum in Restaurant Management (4)

Practice in a real scenario of the learned concepts, skills and attitudes, especially in the major courses. Work experience supervised by a member of the faculty in the field of restaurant management. Students are required to devote at least 15 hours to lecture courses and 200 hours to practice. Must be taken with previous authorization of the director of the Department.

Prerequisite: ACCT 1161, HRMT 2650 y HRMT 2800.

HRMT 3010 - Reception Department (3)

Systematic analysis of the procedures of the front office department office of a hotel. Emphasis on the complete process, from reservation to checkout and invoicing. Application of managerial processes to achieve effectiveness, planning and evaluation of operations and human resources within the context of the general operation of hotels. Requires 45 hours of lecture-lab.

Prerequisite: HRMT1200.

HRMT 3300 - Physical Facilities Management (3)

General functions of the Housekeeping and Engineering Departments of a hotel organization. Discussion of topics related to the general security and maintenance of the physical facilities of a hotel, with emphasis on the preservation of the natural environment. Laundry operations, maintenance and preservation of rooms and public facilities. Technological considerations related to the operations of the property and control of costs.

Prerequisite: HRMT 1200.

HRMT 3330 - Financial Management for Hospitality Organizations (3)

Study of the application of managerial functions in the financial administration of a hotel company. Application of quantitative methods for the planning and control of hotel operations, the evaluation of its capital structure and the optimal administration of its financial assets. Study of the different factors that determine the viability of a hotel project and its potential to generate income.

Prerequisite: HRMT 1200, ACCT 1162.

HRMT 3400 - Management of Casinos (3)

Presentation of the topics related to the management of casinos in Puerto Rico. Application of the managerial functions in elements related to marketing and accounting systems, the management of credit and the control tools in the operation of a casino. Discussion of the most common games of chance in the casinos of the country. Analysis of the impact of games of chance in society. Development of strategies to foment an ethical behavior related to the industry of games of chance.

Prerequisite: HRMT 1200, ACCT 1161.

HRMT 3500 - Technology and Information Systems in the Hospitality Industry (3)

Fundamental aspects of computerized systems and the administration of information systems in a company in the hospitality industry. Discussion of the application of general programs such as: word processors, spreadsheets, presentations and databases in hotel and restaurant operations. Application of technology in hotel operations, food and beverages service, sales and accounting.

Prerequisite: GEIC 1010, HRMT 1200 and ACCT 1161.

HRMT 4400 - Meetings and Convention Management (3)

Sales process and service in the meetings market. Identification and study of the segments that make up this market. Analysis of effective sales techniques for these markets. Planning and developing different types of services for conventions and meetings.

Prerequisite: HRMT 2200.

HRMT 4915 - Internship in Hotel Management (5)

Application of theories and concepts learned in a real business setting. Supervised work experience in the field of lodging facilities management under the supervision of a faculty member of the Hotel and Restaurant Management Program. Requires 15 hours of lecture and a minimum of 285 hours in the Practice Center.

Prerequisite: HRMT 2800, 4400, 3500, 3010, 3330.

HUMA - Humanities

HUMA 4010 - European Cinema (3)

Study of European civilization through its cinematographic art. Analysis of classic and contemporary films that are related to the social, cultural and historical environment. Examination of the social, political, aesthetic and narrative aspects of a particular work, as well as the general theories common to the cinematographic discipline in general. Apply the language of cinema in the analysis of works.

HUSE - Psychosocial Human Services

HUSE 3010 - Intra-Family Violence (3)

Analysis of the concept of intra-family violence as a social problem and a crime. Emphasis on the following aspects of intra-family violence: couple relations, mistreatment of minors, mistreatment of the elderly, mistreatment of handicapped and different people, and mistreatment of mascots or domestic animals. Evaluation of the causality factors and their emotional, physical, psychological and legal repercussions in the victim as well as in the perpetrator. Identification of prevention, intervention and rehabilitation alternatives.

HUSE 3220 - Family Conflicts Intervention (3)

Analysis of family conflicts intervention theories. Emphasis on the effective handling of crisis situations in thehome. Diverse techniques of intervention with crisis situations are modeled.

HUSE 4010 - Ethical, Professional and Legal Aspects in Psychosocial Services (3)

Study of the ethical norms in offering psycho-social human services. Discussion of the universal ethical principles in the social sciences with their related professional and legal explications.

HRMA - Human Resources Management

HRMA 2100 - Human Resource Administration (3)

Recognition of the effectiveness of standards, policies and practices related to human resources in organizations.

Study of strategic planning activities of human resources. Discussion of ethical considerations, justice, fair treatment, inclusion, diversity and the foundations of labor law, as well as the global administration of human resources.

Prerequisite: BADM 1900.

HRMA 3000 - Organization Behavior (3)

Analysis of the dynamics of human interactions in the work environment. Evaluation of the impact that people, groups and structure have on organizations at a local and international level. Recognition of the theories and principles that contribute to improving the effectiveness of organizations as open systems.

Prerequisite: BADM 1900.

HRMA 3100 - Leadership and Supervision (3)

Analysis of leadership aspects focused on supervision at the local and international level. Discussion of supervisory situations related to staffing (staffing), disciplinary process and leadership in organizations. Development of leadership skills related to change management, safety and hygiene, time management and ethics in decisions.

Prerequisite: BADM 1900.

HRMA 3200 - Labor Security and Hygiene (3)

Analysis of the fundamental concepts in security and hygiene in the work environment. Includes industrial and environmental factors and dangers, their effects and their control. Interpretation of federal and state laws, in addition to the standards applicable to the prevention and mitigation of risks that affect health and hygiene in the work environment. Identification of the importance of new information and communication technologies in health and safety activities at work.

HRMA 3400 - Training and Development (3)

Identification of the bases for the establishment of training programs and development of human resources aligned to the goals of the organization. Design of training and development programs that allow motivating, encouraging and developing the employee on a professional and personal level. Emphasis on the importance of developing skills in tune with the labor market and promoting ethical behavior.

Prerequisite: HRMA 2100.

HRMA 3500 - Labor Legislation (3)

Understanding of the fundamentals of labor labor

legislation. It examines the labor legal framework that applies to the administration of human resources in the global sphere. Emphasis on trends that impact organizations and their employees.

Prerequisite: HRMA 2100.

HRMA 3600 - Wage and Salary Management (3)

Evaluation of the components of the systems of remuneration to the personnel. Integration of strategic compensation practices and techniques. Emphasis on the analysis, description and valuation of positions, administration of salaries, wages and benefits. It includes the consideration of national and international aspects that influence the compensation of the organization.

Prerequisite: HRMA 2100.

HRMA 4100 - Syndication and Collective Bargaining (3)

Application of the legal aspects and syndication practices, the process of collective bargaining and the administration of the collective agreement between workers and employer unions, in the public and private sectors. Emphasis on compliance with federal and state norms. Recognition of illicit work practices and the importance of judicial precedents and the use of arbitration in the resolution of labor conflicts.

Prerequisite: HRMA 2100.

HRMA 4915 - Supervised Practice (3)

Integration of knowledge and work skills in the field of human resources management. Practice through experience in a real work scenario, coordinated by a university professor and supervised by a professional of the area. One hundred thirty-five (135) hours of practice are required.

Prerequisite: Have approved 18 credits in major courses with a 3.00 grade point average, 2.50 in the general average, and the authorization of the department's chair.

HRMA 4970 - Integration Seminar (3)

Integration of knowledge, skills and attitudes required for a professional in Integration of the knowledge, skills and attitudes required in the strategic planning of human resources. Emphasis on the transition from student to professional. Grading P/NP.

Prerequisite: Have approved a minimum of 18 credits of the major.

INEN - Industrial Engineering

INEN 3411 - Operations Research I (3)

Linear programming: problem solutions through the Simplex method, duality concept, sensitivity analysis and the transportation problem. Network programming is included for project management applications: Critical Path Methods (CPM), Program Evaluation and Review Technique (PERT).

Prerequisite: ENGR 3200.

INEN 3412 - Operations Research II (3)

Application of various optimization methods, including linear programming and applications; dynamic, integer and non-linear programming. Emphasis on formulating, modeling and applications. Computer usage for problem solving.

Prerequisite: INEN 3411.

INEN 3430 - Advanced Statistics (3)

Application of advanced statistical methods, intervals of confidence, tolerance and prediction. Includes tests of hypothesis of matched data, variance and good-fittness tests. Emphasis on the analysis of variance, multiple regression, transformations, logistic regression and non-parametric methods applied to industrial engineering.

Prerequisite: ENGR 3200.

INEN 3550 - Cost Control and Analysis (3)

Application of principles of accounting: financial reports, work orders. Cost systems: Standard and historic; cost characteristics and control concepts; cost analysis and applications for the decision-making process.

Prerequisite: ENGR 3300.

INEN 3600 - Sustainable Engineering and Industrial Ecology (3)

Analysis of the natural cycles of the planet, entropy and sustainable materials. Discussion of principles of industrial ecology, material flow and energy from industrial systems, prevention of pollution and design for the environment. It includes the use of tools for the evaluation of the life cycle.

Prerequisite: ENGR 1200.

INEN 3710 - Work Measurement (4)

Analysis of work systems. Study of process flow and evaluation, balancing of lines, curves of learning and incentive plan. Design and carrying out time studies, work samplings, use of allowances, predetermined times, performance classification. Requires 60 hours of lecture-lab.

Prerequisite: INEN 3430.

INEN 4300 - Statistical Quality Control (4)

Application of concepts related to the statistical quality control of processes, plus control graphics for variables and attributes. Includes process-capacity analysis. Analysis, design and planning of samples for inspection. Product acceptance and rework, defect prevention. Modern graphic methods for following and improving quality. Requires 60 hours of lecture-lab.

Prerequisite: INEN 3430.

INEN 4400 - Ergonomics and Design of Workstations (4)

Analysis of limitations and achievement capabilities of human beings. Principles and data for application in equipment design and adaptation to the work place environment. Requires 60 hours of lecture-lab.

Prerequisite: INEN 3710.

INEN 4420 - Systems Simulation (4)

Modeling of the relationship between components of systems by computer programs. Generation of random and stochastic variables. Study of highly specialized simulation languages. Statistical considerations for procedures of simulation. Application of simulation to solution of problems in industrial production and technical services. Requires 60 hours of lecture-lab.

Prerequisite: INEN 3710.

INEN 4490 - Operations Planning and Control (3)

Planning and control of production for large-scale operations. Inventory models, and design of inventory systems; techniques to forecast demand; added-production planning. Development of master production schedules. Resources sequencing, programming and dispatching. Basic concepts for Just in Time (JIT) and Materials Prerequisites Planning (MRP).

Prerequisite: INEN 3430.

INEN 4510 - Decision Making under Uncertainty (3)

Application of the following decision rules: admissible decision rules, Bayes decision rules and minimal rules. Analysis of criteria for choosing decision rules and their

relationship to games theory. Use of linear programming for construction of minimal rules. Includes costs of information gathering into loss function. Problems related to time sequence decisions and their relationship to dynamic programming.

Prerequisite: INEN 3411.

INEN 4511 - Lean Six Sigma (4)

Understanding of the impact of the methodology Reads Sigma in the companies. Study and application of tools and methodologies to reduce variability and wastes, to increase production capacity, client satisfaction, and profit. Requires 60 hours of lecture-lab.

Prerequisite: INEN 3710.

INEN 4512 - Advanced Lean Six Sigma (3)

Analysis of the impact of the Lean Sigma methodology in companies. Evaluation of practical tools to work projects in the areas of energy, service, health and manufacturing. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: INEN 4511.

INEN 4520 - Systems Reliability (3)

Lifetime functions. Point estimation, interval estimation for failure statistical models. Mortality tests, truncated functions. Systems reliability. Reliability software. Reliability increase and handling.

Prerequisite: INEN 4300.

INEN 4530 - Validation of Pharmaceutical Processes (3)

Application of validation techniques for pharmaceutical processes and their characterization. Includes the validation of water systems, cleaning, automatic systems, computerized systems, as well as the assessment of manufacturing equipment. Emphasis on emerging trends and techniques in validation processes.

Prerequisite: INEN 4300.

INEN 4545 - Supply Chain Management (3)

Analysis of the management of the supply chain of internal as well as external companies. Evaluation of the important processes in supply chains and how these add value to the product. Use of information technology for the effective management of materials and logistics.

Prerequisite: INEN 4490.

INEN 4550 - Facility Design (3)

Application of principles and practice relative to planning, location, and design of facilities and materials handling. Emphasis on operations research techniques to facilities engineering and design. Discussion of technology and the most used equipment for performing materials transport tasks. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: INEN 4400.

INEN 4560 - Industrial Safety (3)

Application of fundamentals of safety engineering. Accident analysis and prevention. Accident associated cost determination. Analysis of causes and consequences of accidents in work areas. Emphasis on the development of a safety philosophy.

Prerequisite: INEN 4400.

INEN 4570 - Stochastic Processes (3)

Application of basic concepts and techniques related to random processes applied to the construction of models for a variety of practical problems. Emphasis on Poisson processes, Markov chains, queuing models, renovation theory and reliability.

Prerequisite: INEN 3650.

INEN 4580 - Resources Programming and Assignment (3)

Analysis of programming problems. Resource allocations such as: Includes only one resource, parallel processing and workshops. Application of dynamic and integer programming methodology, heuristic methods and simulation to the solution of problems of the area.

Prerequisite: INEN 3411 and INEN 3710.

INEN 4595 - Project Management and Systems Engineering (4)

Analysis of the processes and tools to manage projects and business development taking into account coupling systems, risk analysis and life cycle models. Reengineering and automation, human factors and processes in decision making will be considered.

Prerequisite: ENGR 3300 and INEN 3430.

INEN 4600 - Automated Manufacturing (3)

Study of the components and the design of automated manufacturing systems. Includes: transfer lines, automated assembly lines, digitally controlled machines, industrial

robots, automated material handling systems, programmable logic controllers (PLC), and flexible manufacturing systems. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: ENGR 2130.

INEN 4610 - Services Optimization (3)

Analysis of issues associated with the design and management of service operations. Emphasis on industrial engineering tools to evaluate operations, redesign of processes and the establishment of systems in order to improve the customer experience.

Prerequisite: INEN 3411, INEN 4511.

INEN 4700 - Design of Experiments (3)

Analysis and applications of experimentation design such as balanced blocks, incomplete blocks, Latin squares and random blocks. Includes variance and covariance analysis; factorial experiments. Statistical problems for finding process operating optimal conditions. Analysis for methodology of response surface.

Prerequisite: INEN 3430.

INEN 4810 - Comprehensive Design Experience (3)

Application of design skills, teamwork and effective oral and written communication under the supervision of a faculty member. Solution of a real problem in the study area. Demonstration of the capacity to integrate fundamental knowledge of the study area, through design of a methodology, economic evaluation, analysis and optimization.

Prerequisite: Authorization of the department's chair.

INEN 4915 - Practicum in Industrial Engineering (3)

Practice in a work scenario of industrial engineering in the private industry or the government, supervised by an engineer of the practice center and by a faculty member of the department. Requires a minimum of 135 hours of practice and the preparation of a comprehensive report based on student's real experience in the field of industrial engineering.

Prerequisite: Authorization of the department's chair.

INEN 4921 - Undergraduate Research in Industrial Engineering I (3)

Development of a research project in the area of ??industrial engineering under the supervision of a faculty member. The student will dedicate a minimum of 135

hours of work in the development of this project.

Prerequisite: Authorization of the department's chair.

INEN 4922 - Undergraduate Research in Industrial Engineering II (3)

Development or continuation of a research project in the area of ??industrial engineering under the supervision of a faculty member. The student will dedicate a minimum of 135 hours of work in the development of this project.

Prerequisite: INEN 4921 and the authorization of the department's chair.

INEN 4930 - EIT Exam Seminar (2)

Analysis of the topics of industrial engineering in order to strengthen the knowledge of the student who aspires to take the fundamental engineering revalidation. Discussion of the common topics of mathematics, probability and statistics, economics, ethics, and engineering science. Integration of the theoretical and practical aspects similar to those presented in the fundamental exam of the revalidation offered in Puerto Rico. It requires 75 hours of face-to-face closed laboratory.

Prerequisite: Authorization of the department's chair.

INSR - Insurance

INSR 1400 - Introduction to Risk and Insurance (3)

Discussion of the implications of uncertainty and risk problems in society and the techniques for handling them. Emphasis on the theoretical-legal aspects of insurance and their main applications.

INSR 1500 - Introduction to Disability Life Insurance (3)

Discussion of the principal contracts used to protect people against financial losses attributable to disease, premature death and disability because of age, starting with the economic foundation and basic principles of life insurance. Includes the actuarial and legal aspects and the use of the collective life insurances techniques.

Prerequisite: INSR 1400.

INSR 1600 - Life Insurance (3)

Discussion of specialized topics on life insurance. Emphasis on the functional aspects of life insurers: selection of risks, establishing rates, reserves and values, reinsurance, marketing and handling investments. Includes commercial uses for life insurance; legal doctrines that

govern relations between the insurer and the insured, and beneficiary rights.

INSR 1700 - Employee Benefits Planning (3)

Discussion of the basic concepts on planning for employee benefits. Emphasis on the applicable risk management principles.

Prerequisite: INSR 1500.

INSR 1800 - Personal Uses for Multilinear Insurance (3)

Discussion of the different types of insurances that the private insurance industry offers to deal with personal risks. Includes the expertise for selecting governmental programs that protect people against certain risks in which the State considers that its intervention is justified.

INSR 1900 - Commercial Uses and Functional and Operational Aspects of Multilinear Insurance (3)

Discussion of the commercial uses for property, responsibility, and life insurance; as well as the operational and functional aspects of insurers and employee benefit plans.

Prerequisite: INSR 1800.

INTB - International Business

INTB 2100 - Introduction to International Business (3)

Study of the participation of companies in international business. Discussion of historical, economic and sociocultural differences and the impact of financial markets on international business. Contrast the strategies to do business abroad.

INTB 2200 - Cultural Awareness in International Business (3)

The historical and cultural processes that serve as the framework for economic and business situations in international businesses of different countries and how these situations affect business relationships. The cultures and economic perspectives of Latin American, European and Pacific countries will be analyzed.

Prerequisite: MKTG 1210.

INTB 2301 - Principles of Imports and Exports (3)

The required steps for importing and exporting a product. Introduction to the functioning of the Federal Customs and State Tax Services, functions of a customs broker, laws and regulations that affect importing and exporting a

product.

Prerequisite: INTB 2100.

INTB 2302 - Licenses and Regulations for Imports and Exports (3)

Analysis of the Prerequisites of the Federal and State Customs with regard to licensing and the necessary regulations for imports and exports. The Commodity Control List (CCL) and the Export Control Commodity Numbering (ECCN) are studied. The application for licenses to import and export, functions of the customs broker and the Bureau of Export Administration (BXA) are also studied.

Prerequisite: INTB 2100.

INTB 3330 - Management of Human Resources at the International Level (3)

Study and analysis of the principles which govern the management of human resources from an international perspective. Emphasis on the recruitment process of persons who will work in conditions different from those prevailing in their place of origin. In addition, emphasis will be placed on decisions made regarding the Prerequisite of the recruitment of nationals as a condition to establish business in a determined country. Study of managerial strategies focused on identifying the differences among countries and the necessary capacitating of employees to perform effectively in these circumstances and to convert this challenge into a competitive benefit.

Prerequisite: INTB 2100, BADM 1900.

INTB 3600 - International Business Environment in the Americas, Europe and the Pacific (3)

Study of international business in the Americas, Europe and the Pacific. Analysis of opportunities for exports and imports, the impact of culture, restrictions, regulations and the necessary strategies for entrance to these markets in light of their respective commercial treaties.

Prerequisite: INTB 2200, 2301, 2302.

INTB 3710 - International Sales Contracts and Terms of International Business (3)

Study of international sales contracts through analysis of the specific and general conditions in the process of selling products. Discussion of the function of International Business terms in the allocation of risks and costs, as part of the responsibilities among the exporter, importer and transportation companies in international transactions.

Prerequisite: INTB 2301.

INTB 3750 - Financial Institutions and International Investments (3)

Analysis of the characteristics and operation of financial markets, the role of intermediaries and other financial institutions in international businesses. Emphasis on the interpretation of financial information, the determination of the exchange rates, and the analysis of the main indices and averages of local and international markets. Identification of the characteristics and the mechanisms of the investment process and the determination of the yields and risk analysis, considering the monetary exchange rate. Includes the main negotiable investments, as well as the characteristics of their respective markets and investment strategies.

Prerequisite: FINA 2101, INTB 2100.

INTB 3800 - Administration of International Transportation: Ocean, Air and Land (3)

Analysis of the selection and management of transportation in international transactions. Study of document management, information systems and inventories for all type of merchandise. Emphasis on the importance of shipments in containers and the function of freight agents in the international environment.

Prerequisite: INTB 2301.

INTB 3900 - Management Information Systems in International Business (3)

Systematic study of existing software for obtaining information by use of computerized technology in international business.

Prerequisite: INTB 2100, 2200.

INTB 4200 - International Distribution Systems (3)

Introductory study of the available options for transportation and distribution of goods with regard to a business's imports and exports. Includes distribution and transportation systems by air and sea and market distribution. Emphasis on the selection and evaluation of foreign distributors.

Prerequisite: INTB 2100.

INTB 4220 - International Business Strategy (3)

Analysis of the global environment and its impact on strategic planning of international businesses. Review of the concepts and techniques of the planning process and

selection of business strategies in the international environment. Includes the identification of existing opportunities, the positioning of the product and promotional strategies, decisions on price and distribution in the international market.

Prerequisite: INTB 2100, MKTG 1210.

INTB 4911 - Practice in International Business (3)

Supervised work experience in an organization or company related with international business. Students are required to devote at least 90 hours during the academic term.

Prerequisite: INTB 2301, 2302 and MAEC 3243.

ITAL - Italian

ITAL 1001 - Elementary Italian (4)

Essentials of Italian grammar with emphasis on the spoken language.

ITAL 1002 - Elementary Italian (4)

Essentials of Italian grammar with emphasis on the spoken language.

ITAL 1011 - Italian I (3)

Introduction of the Italian language, through the immersion method. Emphasis on oral communication skills (listening / speaking), reading, writing, and visual interpretation. It requires additional hours of open laboratory.

ITAL 1012 - Italian II (3)

Study of the Italian language, through the immersion method. Emphasis on oral communication skills (listening / speaking), reading, writing, and visual interpretation. It requires additional hours of open laboratory.

Prerequisite: ITAL 1011.

ITAL 2021 - Italian III (3)

Study of the Italian language at an intermediate level through the application of the immersion method. Emphasis on oral communication skills (listening / speaking), reading, writing, and visual interpretation. It requires additional hours of open laboratory.

Prerequisite: ITAL 1012.

ITAL 2022 - Italian IV (3)

Study of the Italian language at an intermediate level through the application of the immersion method. Emphasis on oral communication skills (listening /

speaking), reading, writing, and visual interpretation. It requires additional hours of open laboratory.

Prerequisite: ITAL 2021.

ITAL 3010 - Diction and Phonetics (3)

Strengthening of oral communicative competence. Study of the sounds, intonation and rhythm of the Italian language through basic knowledge of phonetics. Oral practice through the reading of short texts, oral presentations and simulation of everyday situations. It requires additional hours of open laboratory.

Prerequisite: ITAL 2022.

ITAL 3020 - Advanced Writing (3)

Strengthening of communicative competence written in Italian. Study of discursive genres in Italian from everyday, academic and professional life. Identification of the registers of the language and the pertinent grammatical elements in order to write clearly and coherently, using an appropriate vocabulary.

Prerequisite: ITAL 2022.

ITAL 3021 - Italian Literature I (3)

Discussion of key texts of Italian literature from the Middle Ages to the 17th century and the schools or literary periods that frame them. Emphasis on the study of literary history, critical reading, and literary analysis.

Prerequisite: ITAL 3010, ITAL 3020.

ITAL 3022 - Italian Literature II (3)

Analysis of key texts of Italian literature from the 18th century to the end of the 20th century and the schools or literary periods that frame them. Emphasis on the study of literary history, critical reading, and literary analysis.

Prerequisite: ITAL 3021.

ITAL 4010 - Italian Culture and History (3)

Estudio de temas relacionados con la cultura italiana contemporánea desde una aproximación histórica. Análisis de textos de géneros variados, así como de las artes visuales desde un acercamiento intercultural.

Prerequisite: ITAL 2022.

ITEC - Information Technology

ITEC 1100 - Introduction to Information Technology (3)

Study of the components, concepts, principles and ethical aspects that govern information technology. Use of spreadsheet programs and management of databases in the solution of business problems. Requires a total of 45 hours of lecture/lab. Requires additional time in an open lab.

ITEC 1200 - Programming Algorithms (3)

Discussion of programming algorithms. Application of means for the development of logic in the solution of a problem. Description of basic structures such as sequence, decision and repetition. Includes programming logic for the management of arrays and archives. Requires a total of 45 hours of lecture/lab. Requires additional time in an open lab.

ITEC 2301 - Cobol I (3)

Study of the programming language COBOL (Common Business Oriented Language) in structured form, the syntax of programming, documentation, data description, organization and techniques and business applications. Requires additional time in an open lab.

Prerequisite: ITEC 1200.

ITEC 2310 - Visual Programming in Information Systems (3)

Analysis, design and implementation of programs that use a visual programming language. Administration of objects, their properties, events and methods. Requires a total of 45 hours of lecture/lab. Requires additional hours in an open lab.

Prerequisite: ITEC 1200.

ITEC 2450 - Development of Web Page (3)

Design, development and publication of commercial pages in Internet sites that uses a programming language oriented towards the Web. Requires a total of 45 hours of lecture/lab. Requires additional hours in an open lab.

ITEC 2560 - Mobile Applications Programming (3)

Study of the concepts, platforms, structures and syntax of one of the programming languages used in the development of applications for movable devices. Operation of the instructions and tools of the language in problem solving by using intelligent devices. Requires additional hours in an open lab.

Prerequisite: ITEC 1200.

ITEC 3130 - Database Design and Management (3)

Analysis of the basic foundations and the application of database system management. Emphasis on the design and administration of data bases by using different models, methodologies and environments. Requires a total of 45 hours of lecture/lab. Requires additional hours in an open lab.

Prerequisite: ITEC 2310.

ITEC 3330 - Programming Language (3)

Study of a programming language in information technology in the company. Use of a programming language for problem solving in the organization. Requires a total of 45 hours of lecture/lab. Requires additional hours in an open lab.

Prerequisite: ITEC 1200.

ITEC 3350 - Telecommunications and Business Networks (3)

Analysis of the concepts of telecommunications and networks from an organizational perspective. Discussion of technologies, topologies, equipment and security of networks. Analysis of models OSI and TCP/IP.

Prerequisite: ITEC 2450.

ITEC 3400 - Electronic Businesses (3)

Analysis of the theoretical and practical foundations of electronic businesses. Discussion of business strategies and the integration of information systems to the new economy and technology in the Internet. Examination of the different models of electronic businesses. Requires a total of 45 hours of lecture/lab. Requires additional time in an open lab.

Prerequisite: ITEC 2450.

ITEC 3420 - Information System Analysis and Design (3)

Analysis of the methodologies for the design of information systems. Emphasis on the application of the means and techniques in the life cycle of the development of an information system. Requires a total of 45 hours of lecture. Requires additional hours in an open lab.

Prerequisite: ITEC 3130.

ITEC 3570 - Programming of Internet (3)

Analysis of the concepts, structures and syntax of a programming language for Internet to be used in business problem solving. Requires a total of 45 hours of lecture/lab. Requires additional hours in an open lab.

Prerequisite: ITEC 2450.

ITEC 4500 - Auditing and Security of Information Systems (3)

Analysis of the procedures and methods of the audit applied to information systems. Includes the aspects of security and the physical and logical controls.

Prerequisite: ITEC 3420.

ITEC 4870 - Management of Information Systems Projects (3)

Analysis of the organization, planning, and control of information systems projects. Discussion of the scope of the administration of schedule and resources of the project. Practice in the use of project management programs. Requires a total of 45 hours of lecture/lab.

Prerequisite: ITEC 4500.

ITEC 4915 - Practicum (3)

Work experience in a private or public organization in the field of information technology, under the supervision of a faculty member and in coordination with the immediate supervisor of said organization. Requires that the student devote 135 hours during the academic term to carry out the practice.

Prerequisite: Authorization of the department'S chair or the program's coordinator.

ITEC 4916 - Project (3)

Development of a practical project of information systems, under the direction of a faculty member.

Prerequisite: Authorization of the department'S chair or the program's coordinator.

ITEC 4970 - Seminar in Information Systems (3)

Current topics that may give a view of future trends in computer technology and their interactions with information systems. Areas of the great demand such as communications, artificial intelligence, the optimization of operations and the interaction of media in a changing society in search of new technological alternatives to meet the challenges of an organizational environment in

continuous evolution.

Prerequisite: ITEC 3420.

LADE - Landscape Design

LADE 2130 - Control of Insects and Disease (2)

Techniques and recommendations for the control of insects and diseases of greatest economic impact on the cultivation of ornamental plants. Use of appropriate equipment in the application of insecticides according to norms and regulation established to protect the environment. Requires 22.5 hours of lecture and 30 hours of lab.

LADE 2150 - Soil Fertilizing Technology (3)

Classifications of soil, its physical and chemical properties, topography, erosion, their effects and fertility. The use of fertilizers and their application. Requires 30 hours of lecture and 45 hours of lab.

LADE 2260 - Foliaged Plants for Landscaping (3)

Selection, use and management of trees, shrubs and lawns by considering the climate, their capacity to adapt, types of growth, physiological Prerequisites, planting, fertilizing and cultivation procedures. Requires 30 hours of lecture and 45 hours of lab.

Prerequisite: LADE 1120.

LATI - Latin

LATI 1001 - Elementary Latin (3)

Basic Latin grammar with stress on the relationship among Latin, Spanish and English.

LATI 1002 - Elementary Latin (3)

Basic Latin grammar with stress on the relationship among Latin, Spanish and English.

LATI 2021 - Intermediate Latin (3)

Review of Latin grammar. Selected readings from Latin literature.

Prerequisite: LATI 1002 or equivalent.

LATI 2022 - Intermediate Latin (3)

Review of Latin grammar. Selected readings from Latin literature.

Prerequisite: LATI 1002 or equivalent.

LING - Linguistics

LING 4006 - Tutorial English (3)

Emphasis on solving individual student problems in communication skills. The preparation and writing of a research paper.

MAEC - Managerial Economics

MAEC 1213 - History of Economic Thought (3)

The main currents of economic thought since ancient times to the present. The evolution of economic theories are followed together with their maximum exponents and their impact at different historical stages.

MAEC 2140 - Fundamentals of Quantitative Methods (3)

Application of mathematics in business administration. Discussion of the variable concepts, linear and quadratic functions, linear models, and exponential and logarithmic. Use of linear equation and inequation systems, matrices in problem solving.

Prerequisite: GEMA 1200.

MAEC 2211 - Principles of Microeconomics (3)

Study of basic theories and principles relative to the operation of the market in an economic system with emphasis on the microanalysis of the individual decision-making economic units. Application of microanalysis to small, medium and large companies.

Prerequisite: GEMA 1200.

MAEC 2212 - Principles of Macroeconomics (3)

Study of the functioning of the economy as a whole; principles, theories and factors that explain the macroeconomic process. Discussion applied to small, medium and large companies.

Prerequisite: MAEC 2211.

MAEC 2221 - Basic Statistics (3)

Emphasis on the descriptive aspects of statistical analysis. Collection, organization and presentation of statistical data. Frequency distribution. Measures of central tendency, skewness, kurtosis and dispersion. The normal curve and tables.

Prerequisite: GEMA 1200.

MAEC 2222 - Managerial Statistics (3)

Time series analysis; analysis of variance; bivariate linear regression and correlation; tests of significance, statistical quality control; index numbers. Introduction to statistical inference stressed.

Prerequisite: MAEC 2140, 2221.

MAEC 2320 - Political Economy (3)

Integrated study of political and economic institutions and the effect of their interaction.

MAEC 3234 - Labor Economics (3)

Introduction to the field of labor relations from an economic point of view. The labor force as an economic resource in production as opposed to other production factors: capital and work.

Prerequisite: MAEC 2211.

MAEC 3236 - Public Finance and Fiscal Policy (3)

General survey of governmental finance at the federal, state and local levels with special emphasis on the Puerto Rican setting.

Prerequisite: MAEC 2212.

MAEC 3240 - Mathematics for Decision-Making (3)

Functions and relations; functions and their graphs; some basic functional equations in economics. Differential and integral calculus of elementary functions and their application in economic situations. Linear difference in decision-making equations in economics. Matrix and vector analysis and its use in economic analysis.

Prerequisite: MAEC 2140.

MAEC 3243 - International Economics (3)

Survey of the theory of international trade, tariffs, other trade barriers, balance of payments, commercial policies, international finance, foreign exchange rates, foreign investments and international financial institutions.

Prerequisite: MAEC 2212.

MAEC 3250 - Intermediate Statistics (3)

Statistical techniques used in decision-making under uncertain situations: Decision analysis, prediction models, regression and correlation.

Prerequisite: MAEC 2222.

MAEC 3330 - Economic Development of Puerto Rico (3)

Analysis of the models of economic development implemented throughout the history of Puerto Rico and their possibilities of future development on the basis of their present economic potentialities. Study of economic relations with the United States and the insertion of Puerto Rico into the global economy.

Prerequisite: MAEC 2212.

MAEC 4210 - Economics of Multinational Firms (3)

Operations of multinational firms and the economic analysis of conditions that facilitate or hinder their development.

MAEC 4213 - Macroeconomics Applied to Business (3)

Analysis of total economic activity and public policy and their effects on enterprise decision making.

Prerequisite: MAEC 2212.

MAEC 4214 - Intermediate Economic Analysis (Micro) (3)

Pricing processes in the market economy under various isolated and competitive markets. Emphasis on recent quantitative developments in the theory of demand and the firm.

Prerequisite: MAEC 2140, 4213.

MAEC 4220 - Introduction to Econometrics (3)

Introduction to the art and science of building and applying economic models using quantitative instruments. Requires additional time in an open lab.

Prerequisite: MAEC 2222, 3240, 4213.

MAEC 4334 - Energy Resources and Environmental Administration (3)

Theoretical aspects of natural resource allocations stressing those with energy value. Discussion of topics such as inter-temporal methods of assigning resources, external problems applied to environmental economy, optimizing energy resources at the company level, and analysis of aspects of energy and environmental policy as they apply to business.

MAEC 4520 - Economic Development of Emerging Areas (3)

Analysis of the environmental background of the economic

growth of nations and their history, emphasizing problems of emerging areas.

Prerequisite: MAEC 2211.

MAMS - Marketing and Sales

MAMS 2630 - Public Relations (3)

Current public relations practice and its application to marketing. Organization of public relations work; planning and execution of the public relations program; new developments and trends andtheir application.

MAND - Mandarin

MAND 1001 - Basic Mandarin I (4)

Introduction to the phonological system of the language and the foundations of the writing system. Emphasis on oral production and development of vocabulary for effective communication in daily life situations.

MAND 1002 - Basic Mandarin II (4)

Development of the phonological system of the language and the foundations of the writing system. Emphasis on oral production, reading and the development of vocabulary for practical purposes. Cultural aspects will be learned through cocurricular activities.

MAND 2021 - Intermediate Mandarin I (3)

Review of grammar and study of Mandarin composition. Emphasis on the oral language. Practice of reading at the intermediate level.

Prerequisite: MAND 1002 or two years of high school Mandarin.

MAND 2022 - Intermediate Mandarin II (3)

Review of grammar and study of Mandarin composition. Emphasis on the oral language. Practice of reading at the intermediate level.

MASC - Marine Science

MASC 1600 - Fundamentals of Oceanography (3)

Discussion of the history and development of oceanography, the physico-chemical properties of sea water, the currents, tides, waves, and the geologic aspects of the sea-floor. Study of the different ecosystems of the sea, the biological processes, and the effect of climate change on the seas and oceans. Emphasis in the oceanographic characteristics of the Caribbean.

MASC 2610 - Introduction to Geology (3)

Introduction to the composition and dynamics of the Earth from the atomic scale of minerals to the global scale of tectonic plates. Emphasis in the composition of minerals and rocks, the structures of the Earth, processes of the surface of the Earth, and the geologic scale, all this by means of the analysis of the human interactions in the geologic processes.

MASC 2630 - Diving in Marine Sciences (3)

Development of the skills and the basic techniques of diving as a tool of marine research, particularly in the Caribbean. Data obtention, specimen collection, and planning, and implementation of underwater research. Discussion of the basic concepts of diving and practice in a pool and in the sea. Requires 15 hours of lecture and 60 hours of closed lab.

Prerequisite: MASC 1600, satisfactory-passed swimming test, and medical certification of aptitude for diving.

MASC 2640 - Nautical Sciences (3)

Discussion of the principles of boat handling and navigation as a tool in marine sciences. Discussion of the types of recreational, fishing, and research boats, and their use of cartography, pilotage, moorings and knots, safety in navigation, and the use of electronic navigation technology.

Prerequisite: MASC 1600.

MASC 2660 - Geological Oceanography (3)

Introduction to geological processes in marine systems, including the origin and evolution of the oceans, oceanic crust, continental margins, plate boundaries, physiographic provinces, slopes, coastlines, beaches, morphology, structure, plate tectonic theory, volcanism, geochemistry, stratigraphy, sedimentation, and pale oceanography. Emphasis on the application of core concepts with examples from the marine geology of Puerto Rico and the Caribbean.

Prerequisite: MASC 1600 y 2610.

MASC 397_ - Special Topics (3)

Analysis and discussion of different current and relevant topics in the area of marine sciences.

Prerequisite: MASC 3600 and 3650.

MASC 3060 - Chemical Oceanography (3)

Study of the chemical processes that regulate the marine

environment. Application of chemical principles in the descriptive chemistry of the oceans and their sediments, including the composition of salt and marine sediments, major elements, nutrients, and traces. The processes that regulate the composition of seawater, the distribution of chemical species, the interaction of marine chemistry and trace metals on the ocean floor are studied. Emphasis on the application of core concepts with examples of marine chemistry within Puerto Rico and the Caribbean. Biogeochemical cycles and the use of chemical indicators to study oceanic and coastal processes will be discussed.

Prerequisite: MASC 1600 y CHEM 2212.

MASC 3600 - Marine Biology (3)

Study and discussion of the biotic diversity of the seas, coasts and estuaries, their distribution, physiology, behavior, adaptations, ecology, and the relationships between the organisms and the physico-chemical environment. Special consideration to the tropical and Caribbean marine biology.

Prerequisite: MASC 1600 and BIOL 2010.

MASC 3603 - Marine Biology Laboratory (1)

Complementary and supplementary laboratory practices to the course of Marine Biology. Experiences in a closed laboratory, and field trips that emphasize biological, adaptive and ecological aspects of the biota of the seas and coasts, particularly of the Caribbean and Puerto Rico. Requires 45 hours of closed lab.

Corequisite: MASC 3600.

MASC 3610 - Marine Botany (3)

Discussion of systematics, morphology, physiology, ecology, evolution, and the economic importance of algae and marine plants. Description and analysis of the collection, preservation and identification of algae and marine plants. Includes field trips.

Prerequisite: MASC 3600.

MASC 3620 - Ichthyology (3)

Discussion of biology, systematics, evolution, identification, and ecology of marine fish, with emphasis in their diverse structural, physiological. and behavioral adaptations. Emphasis in the biology of Caribbean fish. Includes field trips.

Prerequisite: MASC 3600.

MASC 3650 - Advanced Oceanography (3)

Analysis and discussion of the chemical, geological and physical processes of the oceans. Emphasis in the descriptive chemistry of the oceans, and in their sediments, origin, evolution, and the geological characterization of these, and the different oceanic movements. Special attention to the Caribbean characteristics of these topics. Includes field trips.

Prerequisite: MASC 1600 and 2610.

MASC 3660 - Biological Oceanography (3)

Study of the biological aspects of the marine environment, including the interaction of organisms with their chemical and physical environment. Adaptations, distribution patterns, plankton, nekton and benthos production will be studied, as well as the physiology and ecology of organisms, highlighting the oceanographic aspects of the organism, its relationship with biogeochemical cycles and the effects of ocean currents on the distribution of these. Emphasis on the processes that regulate species and communities and on changes in ecosystem patterns. The uses of the sea, productivity problems and pollution, among others, will be discussed. The application of core concepts is emphasized with examples in the marine biology of Puerto Rico and the Caribbean.

Prerequisite: MASC 3600 and MASC 3603.

MASC 3930 - Marine Research Methods (3)

Planning, design and beginning of a marine research under the supervision of a mentoring professor. Emphasis in the review of literature, the development of the methodology, the obtention and analysis of data.

Prerequisite: MASC 3600.

MASC 4030 - Coral Reef Ecology (3)

Analysis and multidisciplinary discussion of the biology, physiology, and ecology of the coral reef ecosystems and the organisms associated with these. Emphasis in the processes that contribute to the function and complexity of these ecosystems, and the need of their protection and conservation. Includes field trips.

Prerequisite: BIOL 3503, MASC 3600 and 3620.

MASC 4040 - Biology of Marine Mammals, Birds and Turtles (3)

Analysis and discussion of biology, systematics, evolution, identification, and the ecology of sea birds, sea turtles, and marine mammals, with emphasis in their diverse structural

and physiological, and behavioral adaptations. Includes the current state of the conservation programs of these vertebrates in the Caribbean area.

Prerequisite: MASC 3600.

MASC 4050 - Marine Resource Conservation and Management (3)

Analysis, discussion, and application of the techniques, policies, management, and administration of marine resources. Emphasis in marine political geography, international oceanic law, fishing, coastal zone management, and marine transportation. Application of these topics to the existing problems and conflicts in Puerto Rico and the Caribbean. Includes field trips.

Prerequisite: MASC 3600 and 3650.

MASC 4610 - Coastal Geomorphology (3)

Analysis and discussion of the physical, geologic and biological processes that regulate the form and development of the coastline. Emphasis in the geographic variations, the impact of humans in these, and the management and conservation policies regarding environmental problems that these coastal systems face. Includes field trips.

Prerequisite: MASC 3650.

MASC 4660 - Physical Oceanography (3)

Study of the nature and causes of various oceanic motions including the physical properties of seawater, light and sound transmission, temperature distribution, salinity and currents, waves, water masses, circulation, tides, flow, and dynamics of water in estuaries. Emphasis on the application of core concepts with examples of marine physics from Puerto Rico and the Caribbean.

Prerequisite: MASC 1600 y PHYS 3001.

MASC 4910 - Practicum in Marine Sciences (3)

One hundred thirty-five (135) hours of practical work in a scenario of marine research under the supervision of the authorized personnel in a practice center.

Prerequisite: MASC 3930 and the authorization of the coordinator of the program.

MASC 4931 - Marine Research (3)

Development of a research project under the supervision of a mentoring professor. Obtention and analysis of data in the laboratory and field trips, and the presentation of research results in a written and oral form.

Prerequisite: MASC 3930 and the authorization of the program coordinator.

MASC 4932 - MARINE RESEARCH II (3)

Continuation of the research project of the Marine Research I course under the supervision of a mentor professor. Analysis and discussion of the results and the final presentation in written and oral form.

Prerequisite: MASC 4931 and authorization from the program coordinator.

MATH - Mathematics

MATH 1015 - Basic Mathematics for Landscape Design (3)

Metric decimal system, estimation and mathematical vocabulary: problem solving. Conversion from one system to another. Study of the fundamental concepts of geometry and trigonometry. Surface, volume and angle problem solving.

MATH 1020 - Business Mathematics (3)

Review of the basic principles of arithmetic such as decimals, percentages, calculus, squares and square roots.

MATH 1030 - Mathematics for Elementary School Teachers (3)

Fundamental concepts of arithmetic, numerical systems and geometry. Metric system, mathematical estimates, vocabulary and problem solving. Use of calculators and computers.

Prerequisite: GEMA 1000.

MATH 1500 - Precalculus (5)

Study of functions, with emphasis on linear, polynomical, rational, exponential, logarithmic and trigonometric functions. Operations with functions and inverse functions. Study of analytical trigonometry of complex numbers; linear and nonlinear equation systems, inequalities, matrices, determinants and polar coordinates.

Prerequisite: GEMA 1200.

MATH 1511 - Precalculus I (3)

Study of the functions, its algebra and the inverse function with emphasis on linear, polynomial, rational, exponential and logarithmic functions.

Prerequisite: GEMA 1200.

MATH 1512 - Precalculus II (3)

Study of trigonometric and inverse trigonometric functions. Study of analytical trigonometry of complex numbers;linear and nonlinear equations systems; inequations; matrices; determinants and polar coordinates.

Prerequisite: MATH 1511.

MATH 2000 - Discrete Methods (3)

Theory of sets. Binary operations. Relations and functions. Theory of graphs: trees, Eulerian and Hamiltonian circuits and combinatorial analysis. Motivation of problems and applications; elementary principles of counting; permutations and combinations; principles of inclusion/exclusion; recurrence relations.

Prerequisite: GEMA 1200.

MATH 2100 - Introduction to Probability and Statistics (3)

Study of descriptive statistics that includes the basic terminology, data collection by means of sampling methods, graphical representations, the measures of central tendency and dispersion. Introduction to statistical inference by means of estimation and the test of hypothesis. Review of the relation and the representation of data of two variables and the application of correlation analysis and its linear regression. Application of the fundamental concepts of empirical and theoretical probability, the calculation of probabilities of compound events and probability distributions. Use of the graphical calculator and computer programs.

Prerequisite: MATH 1500 or MATH 1512.

MATH 2200 - Combinatory Analyses and Probability (3)

Study of the algebra of sets, the mathematical induction, the theorem of the binomial and the geometric successions and series. Emphasis on the enumeration methods that include selections with and without repetition and the combinatory identities. Study of the axioms and the theorems of classic probability with emphasis on the applications of the Bayes Theorem. Discussion of the main discreet distributions and their measures of central trends and dispersion.

Prerequisite: MATH 2100 or STAT 1201.

MATH 2250 - Calculus for Biology and Environmental Sciences (3)

Study of the fundamental concepts of calculus: limit,

continuity, derivatives and integral of polynomial, rational, exponential and logarithmic functions and their applications for the biological and environmental sciences. Application of the derivative for tracing and interpretation of graphs and optimization problems.

Prerequisite: MATH 1500 or 1512.

MATH 2251 - Calculus I (5)

Limits of a function, the derivative, Rolle's theorem and the mean value theorem, application of the derivative. The definite integral and the fundamental theorem of calculus. Derivatives and integrals of trigonometric, exponential and logarithmic functions. Applications of the definite integral. Topics of analytical geometry: the circle, parabola, ellipse, and hyperbola.

Prerequisite: MATH 1500 or 1512.

MATH 2252 - Calculus II (4)

Study of derivatives and integrals of inverse trigonometric, and hyperbolic functions. Techniques of integration and polar coordinates. Application of arc length in polar form. Study of improper integrals, the indeterminant forms and the application of the L'Hôspital rule. Study of sequences and infinite series. Convergence of series. Representation of functions using power, Taylor and Maclaurin series. Study of the Taylor Theorem and its applications.

Prerequisite: MATH 2251.

MATH 2300 - Statistical Inference (3)

Definition and use of the language of statistical inference and the basic terminology of hypothesis tests. Study of the confidence intervals and their relation with the hypothesis tests. Use of tests with respect to proportions and by halves that include the analysis with two populations. Study and application of the analysis of variances.

Prerequisite: MATH 2100.

MATH 2380 - Topics in Geometry (3)

Study of the fundamental concepts of Euclidean geometry and its application to make mathematical demonstrations. Analysis and application of a selection of topics of Euclidean geometry. Study of the basic principles of non-Euclidean geometries. Use of available technology.

Prerequisite: MATH 1500 or MATH 1511 and MATH 1512.

MATH 2400 - The Language of Mathematics (3)

Presents the techniques for the demonstration of theorems

from the logical point of view as well as from the esthetic point of view. Study of select topics that include fundamental concepts of non-Euclidean geometries, of the countable and the non-countable sets, of prime numbers, the abstract groups and of propositional calculus. Appreciation of the esthetical and ethical aspects of mathematics. Emphasis in the communication of mathematical knowledge with clarity and precision.

Prerequisite: MATH 1500 or MATH 1511 and MATH 1512.

MATH 3000 - Sampling Techniques (3)

Study and application of the basic foundations and the properties of the theory of probabilistic sampling. Review of the different types of sampling, the situations where they should be used and their advantages and limitations.

Prerequisite: MATH 2200 or STAT 1202.

MATH 3060 - Nonparametric Statistics (3)

Study of the presumptions of tests of hypotheses that require nonparametric statistics, such as Chi-Square, Kendall, McNemar, Cochran, Kruskal-Wallis, Mann-Whitney, among others. Application of nonparametric statistics for decision making in different disciplines.

Prerequisite: MATH 2300 or STAT 1202.

MATH 3091 - Mathematical Statistics I (3)

Sample spaces, axioms and elementary theorems of conditional probability, Bayes' theorem, probability distributions and their properties. Mathematical expectations. Mean and variance, moment-generating functions, transformation of random variables. Chebyshev's inequality, the law of large numbers, the Central Limit Theorem. Regression and correlation.

Prerequisite: MATH 2251.

MATH 3092 - Mathematical Statistics II (3)

Estimation, hypothesis testing, order statistics. Analysis of variance (ANOVA), factorial experiments, simple and multiple regression. Analysis of covariance (ANACOVA).

Prerequisite: MATH 3091.

MATH 3130 - Theory of Numbers (3)

Study of the properties of divisibility of whole numbers, the prime numbers and prime factorization. Analysis of congruences, their relation with diophantine equations and their applications. Application of the basic concepts to the multiplicativas functions, the primitive roots and the

primacy tests. Emphasis in the mathematical demonstration. Applications of the theory of numbers to the cryptography. Use of computers in an open lab.

Prerequisite: MATH 2251.

MATH 3250 - Calculus III (3)

Study of the vectors in plane and in space. Cylindrical and spherical coordinates. The calculus of functions of several independent variables: limit, continuity, partial differentiation, chain rule gradient, directional differentiation, tangents planes and normal lines. Determination of extreme values of a two variable function. Multiple integration of rectangular, cylindrical and spherical coordinates. Surface area and volume. Study of integration in vectorial campus: line integrals, divergence theorem and the Green and Stokes theorems.

Prerequisite: MATH 2252.

MATH 3350 - Linear Algebra (3)

Analysis and application of linear equations systems. Development of matrices, determinants and vector spaces. Demonstration of linear dependencies, bases, dimensions and linear transformations. Evaluation of eigenvalues, eigenvectors and approximation by numerical methods. Use of mathematical software tools.

Prerequisite: MATH 2251.

MATH 3370 - Introduction to Mathematical Logic (3)

Calculus of sets, truth rules, propositional calculus. Introduction to axiomatic systems.

Prerequisite: MATH 1500.

MATH 3400 - Differential Equations (3)

Study and application of first order differential equations; linear equations with constant coefficients; linear differential equations of the second and highest-order. Study of mathematical models leading to systems of equations and their applications. Numerical approximations. Study of Laplace transforms, Fourier series and orthogonal functions.

Prerequisite: MATH 2252.

MATH 3710 - Introduction to Mathematical Models (3)

Concept of a mathematical model. Utility and limitations of models. The three steps: 1) abstraction, idealization and formulation; 2) solution of the mathematical problem; 3) relevance of the solution with respect to the original problem. The student will construct and analyze a model

for a particular problem.

Prerequisite: MATH 3091.

MATH 3810 - History of Mathematics (3)

Development of mathematics through the centuries. References to astronomy, quantum mechanics and mathematical physics.

Prerequisite: MATH 2251.

MATH 4100 - Applied Algebra (3)

Sets, binary relations, set functions, basic graph terminology. Partial order, Boolean Algebras and their relationship to the theory of circuits; machines of finite state; formal languages recognized for machines; groups, semigroups and monoid applications; modular arithmetic, the Euclidean algorithm.

Prerequisite: MATH 3350.

MATH 4151 - Numerical Analysis I (3)

Application of numerical analysis techniques: roots of non-linear equations, interpolation of functions, numerical differentiation and integration by finite sums. Analysis of the solution of linear and nonlinear equation systems by successive approximations of equation systems. Use of mathematical software.

Prerequisite: MATH 2252.

MATH 4152 - Numerical Analysis II (3)

Study of difference equations, numerical integration of differential equations, approximation of solutions; partial differential equations. Analysis of finite elements; error analysis. Proofs of the use and limitations of these methods in the computer.

Prerequisite: MATH 3250, 3400, 4151 and a programming course in a high level language.

MATH 4260 - Operational Research (3)

Analysis of the investigation methods of complex system operations in order to optimize their operation. Application to solve real-life problems using mathematical tools that help in decision making.

Prerequisite: STAT 1202 and MATH 3350.

MATH 4391 - Abstract Algebra I (3)

Groups, normal subgroups, quotient groups, Cayley's theorem, homomorphism theorems. Ideals and quotient rings. Fields.

Prerequisite: MATH 3350 and MATH 2000 or COMP 2501.

MATH 4392 - Abstract Algebra II (3)

Groups of geometry and analysis, Sylow theorems, application of Sylow's theory, torsion groups, rings of polynomials, extension fields, elements of the Galois theory.

Prerequisite: MATH 4391.

MATH 4430 - Seminar for Secondary School Teachers (3)

Selection of relevant topics for future high school mathematics teachers. Development of mathematics and its relation to other disciplines. Emphasis on methods of solving problems such as the Polya method. Use of manipulative and available technology.

Prerequisite: MATH 2251.

MATH 4470 - Complex Analysis (3)

Complex differentiation and antidifferentiation, integral formulas of Cauchy-Riemann and related theorems. Taylor and Laurent series, residues and conformal transformations.

Prerequisite: MATH 3250.

MATH 4550 - Advanced Calculus (3)

Fundamental theorems of continuous functions. Introduction to topology in Euclidean Rn space and in metric spaces. Theory of convergence of sequences and series of functions. Concept of derivatives, the Riemann Integral.

Prerequisite: MATH 3250.

MATH 4580 - Introduction to Topology (3)

Sets and functions, compactness, metric spaces, topological spaces, separation axioms and connectedness.

Prerequisite: MATH 4100 or 4391.

MATH 4910 - Practice and Professional Ethics (3)

Completion of tasks through the application of the knowledge and the skills developed in the program in a real work environment and in an institution approved by the practice coordinator. Integration of issues related to the ethics of the profession. It requires a total of 135 hours of practice.

Prerequisite: MATH 3091 or MATH 3400.

MATH 4970 - Integration Seminar (1)

Integration of the knowledge acquired in the mathematics courses through the preparation and presentation of an oral and written creative work, using primarily mathematical articles or practical problems related to the major study area of the student.

Prerequisite: Have approved 38 credits in mathematics.

MDME - Marketing for Digital Media

MDME 1101 - Fundamentals of Marketing for Digital Media (3)

Introduction to the basic concepts of marketing for digital media and how it differs from traditional media marketing. Identifying the impact of digital media on electronic commerce and recognizing the importance of analysis tools in the digital world. Description of the steps to follow for a digital media campaign.

MDME 2201 - Development of Web Tools (3)

Identification of the tools for the creation, design and implementation of a website for the sale of products or services. Recognition of the importance of all the factors that may affect the sales process on a website. Identification of the other tools that complement the sale of products and services on the Internet.

Prerequisite: DGDM 1104.

MDME 2203 - Search Engine Positioning Strategies (3)

Understanding the concept of search engine optimization and positioning and its importance for capturing potential customers. Distinction between implementation of optimization strategies (SEO) and marketing strategies (SEM) of a website in a digital media campaign. Discussion of the use of the business blog to reinforce the positioning of the product or service.

Prerequisite: MDME 2201.

MDME 3020 - Marketing Strategies for Social Media (3)

Analysis of the creation, segmentation and monitoring of accounts or profiles in social networks such as forums, blogs and magazines in relation to the target market for the digital media campaign. Integration of the Internet marketing strategy to the content of the social content exchange sites for the construction and loyalty of the brand.

Prerequisite: MDME 2201.

MDME 3045 - Marketing for Email (3)

Identification of existing tools to create an email campaign. Analysis of the value and implementation of email marketing in the digital strategy. Acknowledgment of the correct use of the databases, content and tools for sending and analyzing email.

Prerequisite: MDME 3020.

MDME 3115 - Content Design Strategy (3)

Study of the strategy of the digital media campaign in the creation and generation of valuable content in order to analyze and try to understand what the public wants or needs. Analysis of the conceptual development of the content to align it with the brand.

Prerequisite: MDME 3020.

MDME 4012 - Web Analytics (3)

Identification of the existing analytical tools for the capture, interpretation, analysis and reporting of the relevant information in the decision making of the digital media marketing according to the objectives. Evaluation of strategies to determine the effectiveness of activities according to the established key performance indicator.

Prerequisite: MDME 3115.

MDME 4041 - Inbound Marketing (3)

Alignment of the strategies for the digital media campaign to promote a product, service or company using all possible tools of attraction (pull) and automation for the conversion of potential customers into a record (lead) and their preparation to receive offers of character commercial.

Prerequisite: MDME 3115.

MDME 4910 - Marketing for Digital Media Practice (3)

Development of skills in a real context within the field of marketing for digital media. It requires a minimum of 180 hours of practice under the supervision of a specialist in the area and to pass it with a minimum grade of B.

Prerequisite: Have approved the major courses except MDME 4973 and MDME 4041 and the authorization of the department's chair or coordinator.

MDME 4973 - Seminar in Marketing for Digital Media (3)

Analysis of topics in the area of ??marketing with an

emphasis on modern trends in this area. These topics will change according to the needs of the student, the development of their skills and new knowledge in the field to know, understand and integrate the updated concepts and dynamics of marketing.

Prerequisite: MDME 3020, 3045 and 3115 . Corequisite: MDME 4910.

MECN - Mechanical Engineering

MECN 3005 - Vectorial Mechanics for Engineers: Statics (3)

Study of force systems. Application of the equations of equilibrium to particles and rigid bodies in two and three dimensions. Analysis of statically determined structures with different types of loads and supports. Calculation of centers of gravity, centroids and moments of inertia of symmetrical and non-symmetrical sectional areas.

Corequisite: PHYS 3311 and MATH 2252.

MECN 3010 - Vectorial Mechanics for Engineers: Dynamics (3)

Study of the fundamentals of classical mechanics for moving objects. Analysis of the kinematics of particles and rigid bodies in one and two dimensions. Emphasis on the study of curvilinear movement. Application of Newton's second law, the principle of work and energy and the principle of impulse and momentum for particles and rigid bodies.

Prerequisite: MECN 3005.

MECN 3115 - Fluid Mechanics and its Applications (3)

Description of fluid properties. Use of fluid statics fundamentals to solve manometry problems and computation of hydrostatic forces. Application of the principles of conservation of mass and energy, and conservation of impulse and linear momentum in solving fluid dynamics problems. Development of methodologies for dimensional analysis, similarity and modeling. Introduction to the study of compressible flows.

Prerequisite: MECN 3005 and MATH 2252.

MECN 3140 - Power Systems of Fluids (3)

Application of the dynamic principles of fluids in power systems that include the flow of fluids. Integration of the techniques of design and analysis of turbo machines: turbines, compressors, pumps and fans. Study of control systems by means of valves. Plan reading applied to

power fluid systems.

Prerequisite: MECN 3115.

MECN 3160 - Dynamics of Motor Vehicles (3)

Analysis of the dynamic principles that determine the movement of motor vehicles, such as adhesion, rolling resistance, aerodynamic forces, power, acceleration and friction. It includes the study of primary mechanical systems such as steering, transmission, braking, and suspension systems and their influence on vehicle performance.

Prerequisite: MECN 3010.

MECN 3165 - Solid Mechanics (3)

Analysis of stresses and deformations due to axial, torsional, flexural, transverse and combined loads. Computation of deflections in statically determined and indeterminate beams. Development of the buckling theory of columns.

Prerequisite: MECN 3005.

MECN 3200 - Mechatronics (3)

Analysis of the concepts of mechatronics with emphasis on analog and digital electronics. Study of the sensors and actuators. Emphasis on resistant, capacitive, inductive, and infrared sensors, direct current engines control, servomotors and pneumatic systems. Design of programs for microcontroller and their applications in electromechanical systems.

Prerequisite: ENGR 3365.

MECN 3250 - Manufacturing Process Laboratory (1)

Application of laboratory techniques for the study of manufacturing processes. It includes the practical use of the necessary equipment for the creation of pieces. Emphasis on the conventional and computerized material removal process. It includes the processes of turning, milling, cutting, polishing and three-dimensional printing. Use of measuring instruments for sizing and geometric tolerance standards. It requires 45 laboratory hours.

Prerequisite: ENGR 2220.

MECN 3350 - Efficiency Airplane Design (3)

Study of design philosophy applied to aircraft design. Analysis of the principles of aerodynamics related to lift and drag on two and three-dimensional airfoils. Discussion of the methods of propulsion in airplanes. Application of the equations of motion for balanced and accelerated

flights.

Prerequisite: MECN 3005.

MECN 3400 - Analysis and Design of Space Missions (3)

Analysis of space missions and the fundamental characteristics of the movement of satellites, rockets and space vehicles. Emphasis on systems engineering commonly used in aerospace engineering, design phases, requirements, systems, processes and integration. Study of ethical cases in space missions.

Prerequisite: MECN 3005.

MECN 3500 - Numerical Methods for Engineering (3)

Description of numerical methods and the theory of computational errors for solving engineering problems. Emphasis on the use of methods to calculate roots of equations, the solution of systems of linear and non-linear equations, curve fitting, interpolation, integration and derivation by numerical approximations, numerical integration of differential equations and optimization techniques. Application of the method of finite differences in the solution of differential equations. Use of computerized programs to solve problems.

Prerequisite: MATH 3400.

MECN 3600 - Gas Turbines and Propulsion Systems (3)

Application of the fundamental concepts of thermodynamics, fluid mechanics, aerodynamics and flow theory to the analysis and design of aerospace vehicle propulsion engines. Includes general classification of propulsion systems, calculation of force and propulsion power in an arbitrary environment and performance.

Prerequisite: MECN 4201.

MECN 397_ - Specials Themes (3)

Discussion of special current issues in the field of Mechanical Engineering not included in the core courses or in those of the concentration of the program.

Prerequisite: Authorization of the department director.

MECN 4105 - Mechanical Vibrations (3)

Analysis of linear systems in the time domain with one or several degrees of freedom subject to free and forced vibrations. Includes matrix representations of multidimensional systems. Determination of natural frequencies and modes of vibration. Application of energy methods and advanced techniques of dynamic systems.

Prerequisite: MECN 3010 and 3500.

MECN 4110 - Mechanisms Design (3)

Analysis of mobility and kinematics of mechanisms. Application of the graphical and computerized techniques of position analysis, speed, and acceleration in mechanisms. Design of levies and gears. Introduction to the synthesis of mechanisms. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: ENGR 2220, MECN 3010.

MECN 4121 - Design of Machine Elements I (3)

Analysis of solid mechanics concepts such as loads, stresses and deformations in the design of machine components. Includes the study of failure theories for ductile and brittle materials and the use of safety factors in component design. Discussion of impact loads and fatigue, fracture and wear failures.

Prerequisite: MECN 3165.

MECN 4122 - Design of Machine Elements II (3)

Analysis of problems in the design of machine elements. It includes the design of machine elements such as bolts, welds, springs, bearings, gears, clutches, and brakes. Use of design and manufacturing standards and manufacturers' catalogs for the design and selection of mechanical components. Design of a machine or structure using the machine elements studied in class.

Prerequisite: MECN 4121.

MECN 4201 - Thermodynamics I (3)

Discussion of the basic concepts of thermodynamics. Includes the study of the properties of pure substances and the equation of the ideal state of gas. Analysis of the transfer of energy by heat, work and mass. Application of the first and second law of thermodynamics.

Prerequisite: MATH 2252.

MECN 4202 - Thermodynamics II (3)

Application of the fundamental concepts of thermodynamics for the study and analysis of power and refrigeration cycles. Use of the psychometric chart and theory to calculate the properties of humid air.

Prerequisite: MECN 4201.

MECN 4210 - Heat Transfer (3)

Analysis of heat transfer mechanisms: conduction, convection and radiation. Study of the fundamentals of convection, and analysis of the coefficients for free and forced convection. Heat transfer analysis with phase changes and heat exchangers.

Prerequisite: MECN 4201.

MECN 4220 - Design of Thermal Systems (3)

Thermal systems analysis and designs. Emphasis on heat exchangers, steam generators, cooling towers and air conditioning and refrigeration systems. Use of computational tools for the solution of design problems.

Prerequisite: MECN 4201.

MECN 4230 - Air Conditioning and Refrigeration (3)

Analysis of the fundamentals of air conditioning and refrigeration. Emphasis on psychrometric computations, comfort and load computations. Identification of the requirements for industrial and commercial refrigeration.

Prerequisite: MECN 4201.

MECN 4235 - Heating, Ventilation, and Air Conditioning Systems Design (3)

Study of heating, ventilation, and air conditioning (HVAC) systems to provide efficient and effective climate control inside a building or architectonic space. Integration of the architectural Prerequisites and restrictions, air flow conditions, and selection of equipment and their impact in the performance and energy costs of the system. Design of an HVAC system following the applicable codes and regulations.

Prerequisite: MECN 4230.

MECN 4240 - Applied Solar Energy (3)

Application of the principles of outer-space solar radiation and atmospheric irradiation. Use of prediction and mean value estimates for irradiation by means of mathematical models using tabulated data. Discussion of fluid mechanics and heat-transfer mechanisms, characteristics of materials and surfaces and their impact on energy transfer. Emphasis on economic feasibility analysis.

Prerequisite: MECN 4201.

MECN 4305 - Engineering Materials (4)

Study of crystalline structures, properties and applications of metals, ceramics, semiconductors, polymers and

compounds. Description of the methods to measure the hardness of metals. Evaluation of the mechanical, thermal, electrical, magnetic and optical behavior of materials. Study of the kinetics of phase transformations. Emphasis on heat treatments of steel.

Prerequisite: MECN 3165.

MECN 4350 - Aerospace Structures and Materials (3)

Study of structures, properties and manufacturing of materials commonly used in the aerospace industry. Analysis of the properties of the sections of the wing and the fuselage of aerospace vehicles. Emphasis on the analysis of beams and plates under buckling conditions. Torsion, bending and shear analysis in wing sections with thin walls and spars.

Prerequisite: MECN 3165.

MECN 4405 - Analysis in Computer Assisted Engineering (3)

Study of the finite element method for solving mechanical engineering problems. Emphasis on modeling and analysis to solve stress and strain problems, structural analysis, fluids, and heat transfer. Use of commercial computer programs for problem solving.

Prerequisite: MECN 4121, MECN 4210.

MECN 4610 - Automatic Control Systems (3)

Analysis and design of control systems in continuous time. Emphasis on the mathematical modeling of dynamic systems, Laplace transform, representation of systems through block diagrams, state variables, system stability and the characteristic equation of control systems. Controller design. Emphasis on proportional, integral, derivative (PID) controllers. Application of control to industrial processes and electromechanical systems.

Prerequisite: MATH 3400.

MECN 4620 - Dynamics and Control of Aerospace Vehicles (3)

Study and analysis of the dynamic characteristics, designing and control aspects of aerospace vehicles. Emphasis on the analysis of longitudinal, lateral and directional stability and control during atmospheric flights. Includes decision analysis and position control of spacecraft.

Prerequisite: MECN 3010.

MECN 4710 - Fluid Mechanics and Thermal Science Laboratory (1)

Development of basic laboratory skills and techniques for the study of fluid mechanics and thermal sciences. Application of safety rules, measurement systems, statistical methods and the proper use of laboratory equipment. Use of laboratory techniques for the hydrostatic and hydrodynamic analysis of fluids and the study of different mechanisms of heat transfer and thermal analysis.
It requires 45 laboratory hours.

Prerequisite: MECN 3115 and MECN 4201.

MECN 4720 - Engineering Materials Material and Solid Mechanics Laboratory (1)

Application of laboratory techniques for metallurgical analysis and the evaluation of the resistance of materials. It includes the preparation, handling and microstructural analysis of materials, hardness tests and heat treatments. Use of experimental methods for the calculation of stresses and deformations. Emphasis is given to testing for impact, tension, torsion, beam bending, column buckling, and column deflections under eccentric loading. It requires 45 laboratory hours.

Prerequisite: MECN 3165 and 4305.

MECN 4730 - Instrumentation, Control and Vibrations Laboratory (1)

Application of laboratory techniques for statistical analysis, measurement and calibration fundamentals, as well as the study of control and vibration systems. Emphasis on temperature, pressure, flow and level sensors. Software implementation of industrial controllers. Use of proportional controllers, PD, PI and PID. Calculation of natural frequency and damping. Study of free and harmonic vibrations in one and two degrees of freedom for linear and torsion systems. It requires 45 laboratory hours.

Prerequisite: MECN 4105 and MECN 4610.

MECN 4815 - Project Design in Mechanical Engineering (3)

Integration of the fundamental knowledge of mechanical engineering to solve a complex design problem with realistic requirements and restrictions. Study and application of the design methodology, selection of potential solutions, work plans, economic analysis and optimization. Emphasis on the organization of collaborative work teams, leadership development, and effective oral and written communication skills. Requires

30 lecture hours, 45 laboratory hours.

Prerequisite: Authorization of the department's chair.

MECN 4820 - Aerospace Experience (3)

Integration of the concepts and methods of analytics used in aerospace engineering. Emphasis on aerospace design. Includes the use of active learning as a tool for the integration of theoretical concepts with the practice exercises by carrying out a project focused on the aerospace area.

Prerequisite: Authorization of the department's chair.

MECN 4911 - Practice in Mechanical Engineering (3)

Practice in a mechanical engineering work scenario in a private industry or in government, supervised by an engineer of the practice center and by a faculty member. Requires a minimum of 135 hours of practice and the preparation of a comprehensive report based on the student's real experience in the field of mechanical engineering.

Prerequisite: Authorization of the department director. .

MECN 4912 - Practice in Mechanical Engineering II (3)

Practicum or continuation of a practicum in a mechanical engineering work setting, whether in private industry or government, supervised by a practicum center engineer and a faculty member. It requires a minimum of 135 hours of practice and the preparation of a comprehensive report based on the student's actual experience of employment in the field of mechanical engineering.

Prerequisite: MECN 4911 and authorization from the department director.

MECN 4921 - Undergraduate Research in Mechanical Engineering I (3)

Development of a research project in the area of mechanical engineering under the supervision of a faculty member. The student will dedicate a minimum of 135 hours of work in the development of the undergraduate research project.

Prerequisite: Authorization of the department's chair.

MECN 4922 - Undergraduate Research in Mechanical Engineering II (3)

Development or continuation of a research project in the area of mechanical engineering under the supervision of a faculty member. The student will dedicate a minimum of

135 hours of work in the development of the undergraduate research project.

Prerequisite: MECN 4921 and the authorization of the department's director.

MECN 4930 - EIT Exam Seminar (2)

Analysis of the topics of mechanical engineering in order to strengthen the knowledge of the student who aspires to take the fundamental engineering revalidation. Discussion of the common topics of mathematics, probability and statistics, economics, ethics, and engineering science. Integration of theoretical and practical aspects similar to those presented in the fundamental revalidation exam offered in Puerto Rico. It requires 75 hours of face-to-face closed laboratory.

Prerequisite: Authorization of the department's chair.

MEDT - Medical Technology

MEDT 4501 - Laboratory Operations I: Basic Principles, Statistics and Molecular Techniques in the Clinical Laboratory (3)

Discussion of basic techniques and concepts of clinical analysis and the associate instrumentation. Includes concepts of molecular biology with emphasis on applied methodology. Study of elements of assessment programs of quality, mathematics, statistics and security of the clinical laboratory. The course consists of 90 hours of lecture-lab and problem solving.

MEDT 4510 - Clinical Chemistry, Pathology and Molecular Diagnosis (4)

Discussion of biochemical concepts, principles of analytical, qualitative and quantitative methods for the determination of important clinical compounds in blood and other fluids. Correlation of the results of these tests with the normal physiology and the pathological processes. Molecular diagnosis techniques in acquired or inherited conditions. Assessment quality concepts and security norms. The course consists of 120 hours of lecture-lab and case studies.

MEDT 4520 - Body Fluids (1)

Review of physical, chemical and biological properties of the fluids the of the human body including the spinal, seminal, synovial, transuded and exuded fluids, urine and others. Emphasis on subjects of anatomy, physiology, pathophysiology and the clinical application. Assessment quality concepts and security norms. The course consists of 30 hours of lecture-lab and the study of clinical cases.

MEDT 4531 - Clinical Immunology (2)

Description of the immune response and its relation to the pathological process and disease diagnosis. Emphasis on immunological and molecular methods in the detection and confirmation of immunopathology. Assessment quality concepts and security norms. The course consists of 60 hours of lecture-lab.

MEDT 4532 - Blood Banking (3)

Application of the donation processes, hemotherapy, immunogenetic systems and identification of antibodies. Legal medical and ethical aspects, procedures and emergent technology in the diagnosis and treatment of pathological conditions, administration of problems and discrepancies are included. Assessment quality concepts and security norms. The course consists of 90 hours of lecture-lab and case studies.

MEDT 4540 - Hematology, Coagulation and Molecular Diagnosis in Hematopathology (4)

Discussion of the hematopoietic process. Emphasis on the identification of normal and abnormal elements. Study of the coagulation mechanism and homeostatic conditions and the procedures in the diagnosis, classification, treatment, and molecular diagnosis of hematopathology. Assessment quality concepts and security norms. The course consists of 120 hours of lecture-lab and case studies.

MEDT 4560 - Mycology and Virology (1)

Explanation of morphologic and biological characteristics of viral and mycotic agents of medical importance. Discussion on the collection and the handling of samples and laboratory methods, transmission modes, epidemiology, pathology, disease prevention and control. Assessment quality concepts and security norms. The course consists of 30 hours of lecture-lab and the study of clinical cases.

MEDT 4570 - Clinical Bacteriology and Molecular Diagnosis of Infectious Diseases (4)

Description of laboratory theory and procedures related to the isolation, identification, etiology, the epidemic, the pathogenesis and immunology of clinical bacteriology. Application of the fundamental principles of molecular diagnosis. Assessment quality concepts and security norms. The course consists of 120 hours of lecture-lab and the study of clinical cases.

MEDT 4585 - Clinical Parasitology (2)

Discussion of the taxonomy, morphology and the life cycle

of parasites of medical importance in humans. Identification of clinical signs and symptoms, treatment and epidemiology. Study of the collection and transportation of samples and laboratory methods used to detect and to identify parasites. Assessment quality concepts and security norms. The course consists of 60 hours of lecture-lab and the study of clinical cases.

MEDT 4593 - Laboratory Operations II: Laboratory Administration, Ethics and Education (2)

Discussion of administration concepts, information systems, professional ethics, personnel recruitment and evaluation, laws and regulations governing the laboratory and the profession. Evaluation of the educational process and the effectiveness of teaching strategies. The course consists of 60 hours of lecture-lab and case studies.

MEDT 4595 - Advanced Seminar and Clinical Research (1)

Design and development of an independent project within an area of the sciences of the clinical laboratory. Integration of the resources for the search for information and the design of the research work. Evaluation and presentation of articles published in scientific magazines or the analysis of clinical cases. Independent studies and lectures on specialized subjects or those related to previous courses. The approval of a comprehensive final examination is required. The course consists of 30 hours of lecture, discussion and presentation of articles and clinical cases.

MEDT 4915 - Clinical Practice in Blood Banking (3)

Exposition of the knowledge acquired in the urinalysis area using routine analytical procedures and vanguard technology in a clinical environment. Application of ethical concepts, quality assessment and security norms. A minimum of 105 hours of practice is required.

Prerequisite: MEDT 4532.

MEDT 4916 - Clinical Practice in Immunology and Serology (2)

Exposition of the knowledge acquired in the urinalysis area using routine analytical procedures and vanguard technology in a clinical environment. Application of ethical concepts, quality assessment and security norms. A minimum of 70 hours of practice is required.

Prerequisite: MEDT 4531.

MEDT 4921 - Practice in Clinical Chemistry (4)

Exposition of the knowledge acquired in the urinalysis area

using routine analytical procedures and vanguard technology in a clinical environment. Application of ethical concepts, quality assessment and security norms. A minimum of 140 hours of practice is required.

Prerequisite: MEDT 4510.

MEDT 4922 - Clinical Practice in Hematology and Coagulation (4)

Exposition of the knowledge acquired in the urinalysis area using routine analytical procedures and vanguard technology in a clinical environment. Application of ethical concepts, quality assessment and security norms. A minimum of 140 hours of practice is required.

Prerequisite: MEDT 4540.

MEDT 4923 - Clinical Practice in Microbiology (4)

Exposition of the knowledge acquired in the urinalysis area using routine analytical procedures and vanguard technology in a clinical environment. Application of ethical concepts, quality assessment and security norms. A minimum of 140 hours of practice is required.

Prerequisite: MEDT 4560, 4570.

MEDT 4924 - Clinical Practice in Urinalysis And Parasitology (2)

Exposition of the knowledge acquired in the urinalysis and parasitology area using routine analytical procedures and vanguard technology in a clinical environment. Application of ethical concepts, quality assessment and security norms. A minimum of 70 hours of practice is required.

Prerequisite: MEDT 4520 and 4585.

MEEM - Medical Emergencies

MEEM 1111 - Skills in Sign Language (3)

Introduction to the basic techniques of sign language. Analysis of communication needs among health professionals and the deaf community. Review of the strategies of health professionals for communication with clients who have communication disorders. Analysis of specific laws related to the deaf patient and the role of interpreters and health professionals. Application of vocabulary and colloquial phrases. Simulated practice of sign language skills as a tool for obtaining health information during an emergency.

MEEM 1120 - Basic Concepts of Medical Emergencies (2)

Description of the evolution of medical emergency systems. It includes the role and responsibilities of the paramedic and the medico-legal aspects.

MEEM 1121 - Pathophysiology (2)

Summary of cellular physiological processes. Consider the processes that result in changes to cellular structure and function.

MEEM 1221 - Customer's Assessment (3)

Review of the communication process as a basis for interaction with the client. Preparation for the client's estimate, including the physical and emotional aspects. It includes decision making, action and documentation. It requires 30 lecture hours and 45 laboratory hours.

Prerequisite: MEEM 1121.

MEEM 1222 - Applied Pharmacology (2)

Discussion of the basic principles of pharmacology. Preparation for venous access and medication administration by said route. It requires 15 hours of conference and 45 hours of laboratory.

Prerequisite: GEMA 1200. Corequisite: CHEM 2110.

MEEM 2141 - Cardiorespiratory Function (2)

Preparation for the restoration of cardiorespiratory function. Practice in basic and advanced measures to maintain cardiorespiratory function. It includes suction, oxygen therapy, intubation, cricothyroidotomy, CPR, defibrillation and cardioversion, among others. It requires 90 hours of laboratory.

Prerequisite: MEEM 1221.

MEEM 2142 - Trauma Handling I (2)

Description of trauma systems and damage mechanisms. It includes the management of traumas that result in hemorrhage and shock, damage to soft tissues, burns and cephalo-facial. Preparation skills in the control of bleeding and application of bandages. It requires 15 hours of conference and 30 hours of laboratory.

Prerequisite: MEEM 1222 . Corequisite: MEEM 2141.

MEEM 2233 - Trauma Handling II (3)

Description of the management of traumas that result in damage to the muscle-skeletal system, including the spine,

thoracic cavity and abdominal cavity. Preparation in immobilization, transfer and transfer techniques. It requires 30 lecture hours and 45 laboratory hours.

Prerequisite: MEEM 2142.

MEEM 2234 - Transportation and Communication System (2)

Review of the standards that govern the acquisition, handling and maintenance of vehicles destined to land and air transport. Preparation of the necessary skills for the transmission and reception of radio equipment. Discussion of the rules, types of systems, procedures and forms of operation of the radio communication system. It includes the handling of the radio communication equipment. Description of the Command System.

Prerequisite: MEEM 1120.

MEEM 2351 - Rescue Operations (2)

Preparation for safe and quick handling of victims trapped in varied scenes. It includes the identification and handling of hazardous materials, rescue in water, in environments with low oxygen levels, highways and dangerous lands. Stabilization, removal and transportation of victims with conditions that threaten their lives. It requires 60 laboratory hours.

Prerequisite: MEEM 2142 . Corequisite: MEEM 2233.

MEEM 3110 - Integrated Practice (4)

Application of knowledge and skills in simulated situations and practice in selected scenarios. Emphasis on the selection of basic intervention strategies for decision making, problem solving, and the effective and safe management of the work scenario and clients. Preparation for the exit option. It requires 15 hours of lectures and 180 hours of clinical practice.

Prerequisite: All core and major courses.

MEEM 3120 - Dimensions of Practice and Professional Ethics (4)

Analysis of the three areas of competence of the paramedic from the professional dimension: service provider, service manager, member of the profession. Emphasis on the ethics of the profession.

Prerequisite: MEEM 3110.

MEEM 3130 - Research Seminar (3)

Description of the investigation process. Analysis of research articles related to this field and their application to

practice.

Prerequisite: MEEM 3110.

MEEM 3140 - Emergencies I (3)

Development of knowledge and skills for the holistic care of patients with states or conditions that have the potential to result in medical emergencies. It includes the state of imminent delivery, pulmonary, neurological, endocrine, gastroenterological, urological and hematological conditions.

Prerequisite: MEEM 3110.

MEEM 4120 - Emergencies II (3)

Development of knowledge and skills for the holistic care of patients with conditions or conditions that have the potential to result in medical emergencies. It includes toxicology and environmental, infectious and behavioral conditions.

Prerequisite: MEEM 3140. Corequisite: MEEM 4180.

MEEM 4180 - Special Populations (3)

Development of knowledge for the care of populations with special needs. Consider the client's age, physical, mental and cultural challenges. Includes general principles of customer management in the home.

Prerequisite: MEEM 3140. Corequisite: MEEM 4120.

MEEM 4190 - Management of Complex Scenarios (3)

Analysis of simulated situations that threaten individual and collective security. Includes scenes of disaster, crime, bioterrorism and weapons of mass destruction among others.

Prerequisite: MEEM 4120 and 4180.

MEEM 4980 - Professional Practice (4)

Application of knowledge and skills in complex simulated situations and practice in scenarios of all areas of expertise. Emphasis on the selection of advanced intervention strategies for decision making, problem solving and effective and safe management of the work scenario and clients. Preparation for the exit. It requires 15 hours of lectures and 180 hours of clinical practice.

Prerequisite: MEEM 4190 and have approved of all the core and major courses.

MGOI - Management and

Organizational Innovation

MGOI 2100 - Organizational Design (3)

Description of the structures, models and organizational systems within a global economy. Discussion of the various organizational options, from traditional structures to contemporary models. Illustration of the relationship of structures, work integration, knowledge management, and organizational innovation.

Prerequisite: BADM 1900.

MGOI 3240 - Ethics and Social Responsibility (3)

Discussion of the ethical principles that govern the administration of organizations. Identification of business cases inherent in ethics and social responsibility. Analysis of the influence of social responsibility and business ethics on the competitive organizational advantage.

MGOI 3300 - Leadership and Organizational Change (3)

Discussion of recent leadership theories and their influence on organizational dynamics, performance and innovation. Use of useful tools for the implementation of organizational changes. Evaluation of planning and change management.

Prerequisite: BADM 2650, ENTR 2200.

MGOI 3400 - Organizational Communication (3)

Schematization of the processes, models and elements of communication in organizations. Analysis of its relationship with leadership, innovation and organizational transformation. Development of intercultural organizational communication skills.

Prerequisite: BADM 2650, MGOI 3300.

MGOI 4245 - Innovation and Creativity (3)

Discussion of the theoretical concepts of creativity and innovation. Analysis of creative thinking for organizational innovation. Application of techniques that promote creativity and innovation.

Prerequisite: ENTR 3900, MGOI 3300.

MGOI 4900 - Management Simulation (2)

Integration of management knowledge and skills and innovation through management simulations.

Prerequisite: Authorization of the department's chair or the Coordinator.

MICR - Microbiology

MICR 3211 - Microbial Physiology (3)

Study of the structures of microorganisms and their functions with emphasis on cells procaryotes. Analysis of the nutrition, growth and microbial metabolism processes. Emphasis on fermentation and energy production.

Prerequisite: BIOL 3105.

MICR 4010 - Microbial Ecology (3)

Study of the biodiversity, structure and the dynamics of the microbial populations. Analysis of the interactions of microorganisms with plants, animales and other microorganisms. Discussion of the biogeochemical cycles with emphasis on the decomposition of organic matter. Requires 30 hours of lecture and 45 hours of lab.

Prerequisite: MICR 3211.

MICR 4505 - Microbiological Applications Techniques (2)

Analysis and development of laboratory skills for the management of microorganisms. Emphasis on the techniques for the study of bacteria growth and nutrition, including anaerobic. Use of basic techniques of molecular biology and genetics in microorganisms. Application of asepsis and security measures in a controlled environment. Development of a research project. Requiresof 90 hours of lab.

Prerequisite: MICR 4010.

MICR 4910 - Practice (2)

Application of the knowledge and skills acquired in the laboratory courses related to microbiology. The student will complete 120 hours of supervised practice. Includes an oral report of the work performed. This course must be passed with the minimum grade of C.

Prerequisite: MICR 4505 and BIOL 4433.

MICR 4955 - Integration Seminar in Microbiology (1)

Analysis and discussion of scientific literature on current issues related to Microbiology. Requires an oral and written presentation.

Prerequisite: Have approved 30 credits of the major courses of the Bachelor's Program in Microbiology, including at least 6 credits in MICR.

MISC-Reserve Officers Corps

Military Sudies

MISC 1010 - Introduction to the Army and Critical Thinking (2)

The outcome of this lesson is for Cadets to understand the course structure and to identify Prerequisites and expectations. A basic understanding of the introductory course for the Reserve Officer Training Corps Program will enable the Cadets to develop a sense of what to expect in the ROTC program, as well as what is important to the US Army in the early stages of leader develop.

MISC 1020 - Foundations of Agile and Adaptive Leadership (2)

Lifelong Learning/Lifelong Learner/Pursue excellence and continue to grow/Value lifelong learning as fundamental to individual and organizational success.

MISC 2010 - Leadership and Decision Making (2)

The outcome of this lesson is for Cadets to understand the course structure and to identity Prerequisites and expectations. A basic understanding of the MSL II first semester will enable the Cadets to develop a sense of what to expect for this first semester of their second year of ROCT as they continue their development as the future leadership of the United States Army.

MISC 2020 - Army Doctrine and Team Development (2)

The outcome of this lesson is for Cadets to understand the course structure and to identify Prerequisites and expectations. A basic understanding of the MSL II second semester will enable the Cadets to develop a sense of what to expect for the last semester of their second year of ROTC as they continue their development as the future leadership of the United States Army.

MISC 3010 - Training Management and The Warfighting Functions (4)

The outcome of this lesson is for Cadets to understand the course structure and to identify Prerequisites and expectations. A basic understanding of the advance course for the Reserve Officer Training Corps Program will enable the Cadets to develop a sense of what to expect and be expected during the next year in BOLC A, as well as what is important to the US Army in the early stages of leader develop.

MISC 3020 - Applied Leadership in Small Unit Operations (4)

The outcome of this lesson is for Cadets to understand the

course structure and to identify Prerequisites and expectations. A basic understanding of the advance course for the Reserve Officer Training Corps Program will enable the Cadets to develop a sense of what to expect in the ROTC program, as well as what is important to the US Army in the early stages of leader development.

MISC 3141 - English For Today's Army I (Basic Level) (1)

This course is designed for those students who have demonstrated a limited proficiency in the English language in the English Comprehension Level Test provided by the Defense Language Institute, English Language Center at Lackland Air Base, San Antonio, Texas. Emphasis on pronunciation, reading comprehension, vocabulary and a general review of grammar.

MISC 3142 - English For Today's Army Ii (Basic Level) (1)

This course is designed for those students who have demonstrated a limited proficiency in the English language in the English Comprehension Level Test provided by the Defense Language Institute, English Language Center at Lackland Air Base, San Antonio, Texas. Emphasis on pronunciation, reading comprehension, vocabulary and a general review of grammar.

MISC 3143 - English For Today's Army Ii (Intermediate Level) (1)

This course is designed for those students who have demonstrated a limited proficiency in the English language in the English Comprehension Level Test provided by the Defense Language Institute, English Language Center at Lackland Air Base, San Antonio, Texas, Emphasis on pronunciation, reading comprehension, vocabulary and a general review of grammar.

MISC 3144 - English For Today's Army Ii (Intermediate Level) (1)

This course is designed for those students who have demonstrated a limited proficiency in the English language in the English Comprehension Level Test provided by the Defense Language Institute, English Language Center at Lackland Air Base, San Antonio, Texas, Emphasis on pronunciation, reading comprehension, vocabulary and a general review of grammar.

MISC 3151 - Military Briefing I (2)

Courses designed for third year Military Science students who have demonstrated certain ability or dexterity in the English language as measured by the English

Comprehension Level Test (ECLT), the official Department of Defense English language proficiency test. Practice in military briefings, with special emphasis on formal and informal outlines, and the correct use of military visual aids. Leadership evaluation, including an acculturation seminar. Each course requires 30 hours of lecture, seminars or practical exercises. To be taken only as electives.

MISC 3152 - Military Briefing II (2)

Courses designed for third year Military Science students who have demonstrated certain ability or dexterity in the English language as measured by the English Comprehension Level Test (ECLT), the official Department of Defense English language proficiency test. Practice in military briefings, with special emphasis on formal and informal outlines, and the correct use of military visual aids. Leadership evaluation, including an acculturation seminar. Each course requires 30 hours of lecture, seminars or practical exercises. To be taken only as electives.

MISC 4010 - The Army Officer (4)

Lifelong Learning/Lifelong Learner (includes digital literacy)/Pursue excellence and continue to grow/Value lifelong learning as fundamental to individual and organizational success.

MISC 4020 - Company Grade Leadership (4)

Lifelong Learning/Lifelong Learner (includes digital literacy)/Pursue excellence and continue to grow/Value lifelong learning as fundamental to individual and organizational success.

MISC 4141 - Military Writing I (2)

Courses designed for military students who wish to improve their military writing skills in English. Emphasis on military writing styles and formats. Topics include military memorandums, autobiographies, military history analysis, and a military ethics paper. Each course requires 30 hours of lecture, seminars, case studies, or practical exercises. To be taken only as electives.

MKTG - Marketing

MKTG 1210 - Introduction to Marketing (3)

Discussion of basic concepts of integrated marketing from the conception of the product until its distribution and use. Identification of consumer needs through the process of goods exchange, services and ideas. Description of the variables that organization can and cannot control in the

marketing environment.

MKTG 1220 - Introduction to Agricultural Marketing (3)

Introduction to the marketing system from an agricultural perspective. The necessary operations for the distribution of agricultural goods and services from the producer to the consumer. Study of the controlled variables such as products, price, promotion and distribution as well as the non-controlled variables of an agricultural enterprise.

MKTG 2220 - Marketing Management (3)

Discussion of the managerial functions associated with the administrative marketing process. It includes planning, organizing, directing and controlling the variables of the marketing mix. Emphasis on the analysis of the environment, on the needs of the market and the development of actions that allow a sustainable and competitive growth of the organization.

Prerequisite: MKTG 1210.

MKTG 2223 - Consumer Behavior (3)

Discussion of consumer behavior in the search for product alternatives that can satisfy their needs and the influence of this process on the organizations' management decisions. Analysis of the economic, psychological, socio-cultural and technological factors that affect the behavior and decision-making process of the consumer.

Prerequisite: MKTG 1210.

MKTG 2910 - Practice (3)

Work experience in the sales area supervised jointly by a university professor and a professional designated from the Practice Center. The student is required to devote at least 135 hours during the semester to complete the assigned work.

Prerequisite: Authorization of the chair of the department.

MKTG 2970 - Seminar in Sales (3)

Integration of knowledge, skills and attitudes in a simulated work scenario. Application of techniques or methods to situations related to the sale area.

Prerequisite: Authorization of the chair of the department.

MKTG 3230 - Integrated Marketing Communication (3)

Analysis of the integration of the components of the marketing communication mix: advertising (paid and unpaid), sales promotion, public relations, personal selling and direct and interactive marketing. Includes new trends, such as digital communication and social media. The advantages and disadvantages of these components are contrasted, as well as the implementation of these in the development of communication strategies. Requires the design of an integrated marketing communication plan.

Prerequisite: MKTG 2223.

MKTG 3233 - Public Relations in Organizations (3)

Analysis of the interrelation between organizations and their internal and external environment. Selecting the appropriate response that organizations can do to create and sustain a favorable image in front of the public.

Prerequisite: MKTG 3230.

MKTG 3234 - Personal Sales (3)

Analysis of the sales process from a domestic and global market perspective, recognizing its impact on the economy. Emphasis on the communication process between buyers and sellers, considering ethical and legal elements.

Prerequisite: MKTG 1210.

MKTG 3235 - Sales Management (3)

Management of sales strategies and policies in an organization, according to its market. It includes the processes of selection, training, compensation, motivation and direction of the sales force, until its capabilities are enhanced. Emphasis on sales projections.

Prerequisite: MKTG 2220.

MKTG 3236 - Retail Selling (3)

Comparison of retail operational models and their trends in the market. Emphasis on the development of buying and selling strategies, inventory control and technology.

Prerequisite: MKTG 1210.

MKTG 3237 - Service Marketing (3)

Analysis of the characteristics of services as products and their application in the development of marketing strategies.

Prerequisite: MKTG 1210.

MKTG 3238 - Principles of Publicity (3)

Application of fundamental aspects and trends of publicity and its role in contemporary marketing. Emphasis on the

concepts of developing advertisement, graphic design, media selection, creative plan, customer service and other aspects related to the publicity campaign.

Prerequisite: MKTG 3230.

MKTG 3239 - Social Marketing (3)

Distinction of the social aspect as a strategic and competitive element in the organization. Analysis of marketing practices aimed at the transformation and social welfare of the community.

Prerequisite: MKTG 2220.

MKTG 3240 - Ethics in Marketing (3)

Application of the rules of ethical behavior that govern activities, processes and decisions in marketing. Includes corporate social responsibility, regulatory guidelines, and discussion of cases and articles that describe the practice of ethics in marketing.

Prerequisite: MKTG 1210.

MKTG 3241 - Graphic Art in Marketing (3)

Application of traditional and digital graphic arts in marketing of goods and services. Analysis of basic graphic design techniques, strategies and processes that identify and promote the company or the institution. It requires adtional hours of open laboratory.

MKTG 3242 - Social Media Marketing (3)

Analysis of the fundamentals or principles of the integration of marketing to the social media most frequently used in the network, such as forums, web, blogs, magazines, marketing content and social content exchange sites. Includes analysis of other variables of direct response marketing.

Prerequisite: MKTG 3230.

MKTG 3243 - Distribution Logistics (3)

Discussion of the mechanisms that allow the efficient and optimal delivery of goods, services and ideas from the producer to the consumer. Study of the selection, configuration and management of distribution channels integrated to the marketing components. Emphasis on the design, implementation, administration and evaluation of the strategies of the distribution channels at the local and international level.

Prerequisite: MKTG 2220.

MKTG 4240 - Strategic Marketing (3)

Application of marketing strategies to real cases and situations. Analysis and presentation of alternatives to identify opportunities and solve problems. Emphasis on the decision-making process, the implementation of these and the evaluation of the results. Requires the design of a strategic marketing plan.

Prerequisite: MKTG 2220 and MKTG 3230.

MKTG 4243 - Marketing Research (3)

Application of research methods with emphasis on decision making in the marketing area. It includes the study of the different mechanisms and investigation techniques that provide adequate and pertinent information for the identification of opportunities and the solution of problems. It requires the development of research projects and additional hours of open laboratory.

Prerequisite: MKTG 2220 and MAEC 2221.

MKTG 4244 - Global Marketing (3)

Analysis of marketing concepts and practices used between different countries. Application of the marketing process, market identification, strategy planning, and modifications and adaptations needed for the operation of marketing in global markets. Requires the elaboration of a marketing plan at the global focus.

Prerequisite: MKTG 2220.

MKTG 4245 - Digital Marketing (3)

Application of Internet resources to maximize the achievement of marketing objectives. Evaluation of the particularities of digital technologies in order to achieve efficiency and effectiveness in the processes to improve access to markets. Emphasis on the use of technological tools, considering ethical and legal aspects. It requires adtional hours of open laboratory.

Prerequisite: MKTG 4240.

MKTG 4246 - Product Management (3)

Analysis of strategies and the development of products or product lines. It includes the management of brands. Emphasis on planning, organizing, executing, directing, and controlling the marketing components to achieve product success.

Prerequisite: MKTG 2220.

MKTG 4248 - Small Business Marketing (3)

Application of marketing principles and concepts in small business. Analysis of external and internal variables that influence the development and marketing process of a small business. It requires the development of a small business marketing plan.

Prerequisite: MKTG 2220.

MKTG 4820 - Analytical Marketing (3)

Application of tools to generate knowledge and indicators in functional areas of marketing that help make better decisions. Emphasis on analyzing the performance of marketing strategies to maximize their effectiveness and optimize return on investment (ROI).

Prerequisite: MKTG 2220 and MAEC 2222.

MKTG 4910 - Supervised Practice in Marketing (3)

It exposes the student to the development of skills in a real environment within the marketing field under the joint supervision of the teacher and the professional designated by the practice center. It requires 135 hours of supervised practice.

Prerequisite: Authorization of the department chair or program coordinator, and have approved 21 credits in marketing.

MKTG 4973 - Integrated Seminar in Marketing (3)

Integration of the knowledge, skills and attitudes that are required in a professional in this field to make strategic decisions within an organization. Analysis of topics considering trends in the marketing area. Emphasis on the transition from student to professional.

Prerequisite: Have approved a minimum of 21 major credits.

MMAT - Materials Management

MMAT 2103 - Introduction to Materials Management (3)

Introduction to the systems of planning, organization and control of the flow of materials. Includes the basic elements of inventory systems, available techniques for predicting demand and different types of operational environments. The interaction of the finished product is studied.

MMAT 3211 - Inventory Management (3)

Planning and inventory control systems. Includes inventory decisions for independent and dependent demand, master production plan, materials Prerequisite plan and capacity plan. Includes, in addition, the aspects of management control of these systems, such as: information Prerequisites for planning and control, performance and feedback of results. Practical applications of these concepts using a materials Prerequisite plan.

Prerequisite: GEIC 1010, MMAT 2103.

MMAT 3212 - Planning and Production Control (3)

The principles and techniques used for planning, controlling and evaluating production activities. Plans are studied at different time levels: strategic, short and long range, and feedback methods. Different forms of production (workshops, repetitive and process) are studied.

Prerequisite: MMAT 3211.

MMAT 3220 - Purchasing Management (3)

Techniques related to the purchasing process. Bargaining and contracting in accordance with the commercial code and special laws of Puerto Rico. Identification and development of materials supply sources. Selection of suppliers, control and evaluation of their performance. Computerized purchasing systems, maintenance of a database and the interaction with the materials Prerequisites plan.

Prerequisite: MMAT 2103.

MMAT 4350 - Planning of Business Resources (3)

The process necessary for implementing the materials Prerequisites plan and the manufacturing resources plan from the world class point of view. Emphasis on information system processing, flow and integration.

Prerequisite: GEIC 1010, MMAT 3212.

MMAT 4360 - Managerial Productivity Techniques (3)

Managerial productivity strategies and techniques that that may lead an enterprise to low production costs and at the same time, to high-quality products. The Kanban inventory system and its comparison with the materials Prerequisite plan. The classical concept of economic order quantity compared with the policy of not producing and buying by lot, but rather, part by part. Strategy for establishing reliability of suppliers with regard to deliveries and quality levels. Principles of quality

management. Analysis of quality circles and analysis techniques. Improvement in productivity by computerized integrated management.

Prerequisite: MMAT 3212.

MOPR - Mobile Device Programming

MOPR 1000 - Introduction to the technology, development and design of Mobile devices (3)

Study of the basic principles of mobile technology and the problems that arise from the mobility of the devices used. Analysis of the distribution of applications or Web Services. Application of the principles of design for mobile devices. Basic programming in scripting languages in applications for mobile devices. Requires time in a virtual open lab.

Prerequisite: COMP 2120.

MOPR 1201 - Development of mobile applications Android 1 (3)

Discussion of the architecture, the organization and the way the Android operating system functions. Use of the run time system, bookstore, and virtual machine and identification of components of the applications platform. Installation, configuration and application of the Android development system based on the Eclipse tool. Basic programming in Java language. Application of the programming, verification and publication procedures of Android applications. Requires time in a virtual open lab.

Prerequisite: COMP 2120. Corequisite: MOPR 1000.

MOPR 1202 - Development of mobile applications Android 2 (3)

Advanced programming in Java language. Development of applications based on the inherent structures of the Android platform. Use and application of packages and bookstores of its programmatic interface. Analysis of the development cycle of Android applications, content suppliers and data management. Use of the multimedia and location functions, among others. Requires time in a virtual open lab.

Prerequisite: MOPR 1201.

MOPR 2001 - Development of mobile applications Apple 1 iOS (3)

Discussion of the architecture, the organization and the way that the operating system Apple iOS functions. Use of

its run time system bookstore, and virtual machine and identification of components of the applications platform. Basic programming in the Objective-C language. Installation, configuration and application of the development system Apple iOS based on XCode. Application of programming procedures, verification and publication of applications of Apple iOS. Requires time in a virtual open lab.

Prerequisite: MOPR 1000 and COMP 2315.

MOPR 2002 - Development of mobile applications Apple 2 iOS (3)

Advanced programming in Objective-C language. Development of applications based on the inherent structures of the Apple platform iOS such as the graphic system and the programming components. Use and application of packages and bookstores of its programmatic interface. Analysis of the development cycle of applications, content suppliers and data management. Use of multimedia and location functions, and other advanced functions. Requires time in a virtual open lab.

Prerequisite: MOPR 2001.

MOPR 2101 - Development of mobile applications of Windows Phone 1 (3)

Discussion of the architecture, the organization and the way that the operating system Phone Windows functions. Use of its run time system, bookstore, and virtual machine and identification of components of the applications platform. Programming in languages C# and XAML. Installation, configuration and application of the development system Phone Windows based on those languages. Application of programming procedures, verification and publication of applications of Phone Windows. Requires time in a virtual open lab.

Prerequisite: MOPR 1000 and COMP 2315.

MOPR 2102 - Development of mobile applications Windows Phone 2 (3)

Advanced programming in languages C# and XAML. Development of applications based on the inherent structures of the platform Phone Windows, such as the graphical system and the programming components. Use and application of packages and bookstores of the programmatic interface. Analysis of the development cycle of applications Phone Windows, content suppliers and data management. Use of multimedia and location functions and other advanced functions. Requires time in a virtual open lab.

Prerequisite: MOPR 2101.

MOPR 2970 - Seminar in Programming of Mobile devices (3)

Development of a mobile application and placement in some distribution center at the international level. Requires additional time in a virtual open lab.

Prerequisite: MOPR 1202, 2001, 2101 and authorization of the department's chair. .

MUBA - Music Business Management

MUBA 1000 - Introduction to Business in the Music Industry (3)

Discussion of the main topics of the music business and the organizations of the music related to it.

MUBA 1100 - Music Marketing (3)

Discussion of the movement of the recorded and printed product from the concept of the product or its recording to the point of sale. Analysis of the applicable marketing structures in the entertainment industry.

Prerequisite: MKTG 1210.

MUBA 1200 - Principles of Management of Artists (3)

Evaluation of the managerial aspects directed to the management of careers or artistic groups. Analysis of the functions of talent agencies, personnel management, the hiring until the artistic performance, the trips ("Tours") and artistic promotion.

Prerequisite: MUBA 1000.

MUBA 1300 - Musical Fundamentals for Enterprises (3)

Study of the musical foundations necessary for decision making in the processes of carrying out projects in companies in the music industry.

Prerequisite: GEPE 3020.

MUBA 1400 - Legal Aspects in The Music Business (3)

Discussion of the application of the legal aspects in the music industry with emphasis on main contracts of industrialists devoted to the business related with music.

MUBA 2000 - Dissemination, Promotion and Distribution of Music in Internet (3)

Selection of the various channels used for the dissemination, promotion and distribution of music on digital platforms.

Prerequisite: MUBA 1100.

MUBA 397_ - Special Topics (1)

Discussion and analysis of specific current issues related to music companies.

Prerequisite: Authorization of the department's chair.

MUBA 3000 - Introduction to Musical Production (3)

Organization of human resources, components and processes necessary for the realization of a musical production.

Prerequisite: MUBA 1100.

MUBA 4000 - Project Management in the Musical Industry (3)

Planning of resources, processes and budget for the realization of a musical project in a given time.

Prerequisite: MUBA 2000 and MUBA 3000.

MUBA 4971 - Integrated Seminar (3)

Integration of knowledge learned such as conceptualization, planning and marketing, necessary for the production of a musical event. It requires an oral and written presentation of an integrated project for the production of a musical event.

Prerequisite: MKTG 3230 andMUBA 4000.

MUED - Music Education

MUED 1091 - Field Experiences in Music Education I (1)

Exposition of students to the educational system with emphasis on the music program. Selected group or individual experiences in schools with Musical Education programs. Requires a minimum of 10 hours in the educational scenario and 10 hours of meetings with the professor. Must be approved with a minimum grade of B.

MUED 2080 - Field Experiences in Music Education II (2)

Field experiences through visits to schools with Musical

Education programs, in order to observe, reflect and analyze the environment, the administration the classroom, the teaching strategies, the participation and the management of time. Requires 15 school hours, a minimum of 15 hours in the educational scenario and the approval of the course with a minimum grade of B.

Prerequisite: MUED 1091. Corequisite: MUED 4401.

MUED 3080 - Clinical Experiences in Music Education (2)

Clinical experiences as a student-teacher in a school with Musical Education programs. Emphasis on students' professional development and the use of effective teaching strategies to work with small groups and then with the whole group. Requires 15 school hours, a minimum of 25 hours in the educational scenario and the approval of the course with a minimum grade of B.

Prerequisite: MUED 2080 and authorization of the Coordinator or Supervisor of Practice Teaching. Corequisite: MUED 4411.

MUED 3301 - Strategies and Techniques I: General Vocal (2)

Analysis of foundations of vocal technique and their application in teaching of vocal-choral. Examination of the fundamental techniques of execution and strategies of teaching in agreement with the student's level of development Integration of the study of cultural and musical influences in the development of the choral repertoire.

MUED 3302 - Strategies and Techniques II: General Vocal (2)

Analysis of foundations of vocal technique and their application in teaching of vocal-choral. Examination of the fundamental techniques of execution and strategies of teaching in agreement with the student's level of development Integration of the study of cultural and musical influences in the development of the choral repertoire.

MUED 3303 - Vocal Strategies and Techniques III: Diction (2)

Application of the basic rules of pronunciation of the Italian, German, French, Spanish and Latin languages. Analysis of the foundations of the vocal technique and the vocal-coral teaching methods applied to a repertoire of different levels, historical periods and languages. Study of the international phonetic alphabet and its implications in diction.

MUED 3330 - Strategies and Techniques of Musical Instruments I: String (2)

Review of theoretical and practical problems pertinent to the teaching of string instruments. Analysis of fundamental performance techniques and teaching strategies in harmony with student development in each school level. Identification of useful technological resources in instructional design

MUED 3331 - Strategies and Techniques of Musical Instruments II: Percussion (2)

Review of theoretical and practical problems pertinent to the teaching of percussion instruments. Analysis of fundamental performance techniques and teaching strategies in harmony with student development in each school level. Integration of the study of cultural and musical influences in the development of rhythms and percussion instruments used in concert music, march and ethnic music. Identification of useful technological resources in instructional design.

MUED 3332 - Instrumental Strategies and Techniques III: Metals (2)

Review of theoretical and practical problems pertinent to the teaching of metals. Analysis of fundamental performance techniques and teaching strategies in harmony with student development in each school level. Identification of useful technological resources in instructional design.

MUED 3333 - Instrumental Strategies and Techniques IV: Wind-Wood (2)

Review of theoretical and practical problems pertinent to the teaching of the wind-wood instruments. Analysis of fundamental performance techniques and teaching strategies in harmony with student development in each school level. Identification of useful technological resources in instructional design.

MUED 4401 - Elementary Methods: The Teaching of Music (3)

Analysis of learning theories and the applicable methodologies in the teaching of music. Emphasis on exposure to rhythmic and creative experiences, childhood songs and the melody flute, using the Orff, Kodály, Suzuki and Dalcroze methods. Includes the preparation and evaluation of educational materials, performance of tasks and writing of plans. A minimum of B is required to pass this course.

Prerequisite: EDUC 2032, 2870, MUSI 4500, MUED

3330, 3331, or MUED 3301-3302 and courses of Applied Music up to level 2 - -2. Corequisite: MUED 2080.

MUED 4411 - Secondary Methods: The Teaching of Music (3)

Exposure to and discussion of the methods and philosophy for the teaching of music. Includes the study of the characteristics of the process of: planning, evaluation, assessment, preparation and evaluation of topics and materials of the music curriculum at the secondary level. A minimum of B is required to pass this course.

Prerequisite: MUED 4401. Corequisite: MUED 3080.

MUED 4436 - Technology in Music Education (3)

Evaluate technological resources and strategies to integrate technology in music education. Emphasis on the development of computer skills with keyboard MIDI. Includes search skills,identifgication of the use of reliable sources of information, the use of applications to record and edit musical sequences in several formats in addition to programs to manipulate complex musical notations. The operating systems (MSWindows, MacOS, and UbuntuLinux, among others) will be used, in computers with access to the Web.

MUED 4915 - Student Teaching in Music: General-Vocal (4)

Clinical experience as a student-teacher in a classroom or other educational settings specialized in general-vocal music, under the direct supervision of a certificated cooperating teacher and a university supervisor. Students will perform the functions of the regular teacher and will demonstrate the competencies acquired throughout their training program. Students must meet all the Prerequisites for admission to Practice Teaching as stipulated in the current General Catalog. Students should apply four weeks before the end of the regular semester prior to the semester in which they expect to do their practice teaching.

MUED 4916 - Student Teaching in Music: Instrumental (4)

Clinical experience as a student-teacher in a classroom or other educational settings specialized in instrumental music, under the direct supervision of a certificated cooperating teacher and a university supervisor. Students will perform the functions of the regular teacher and will demonstrate the competencies acquired throughout their training program. Students must meet all the Prerequisites for admission to Practice Teaching as stipulated in the current General Catalog. Students should apply four weeks before the end of the regular semester prior to the

semester in which they expect to do their practice teaching.

MUSI - Applied Music

MUSI 101_ - Fundamentals of Applied Music I (1)

Individual instruction in the student's principal instrument: one half-hour class per week. Placement in these courses will be by audition. Courses are for the training of students in the Music Department who lack the skills required to enter the first level of applied music in their principal instruments. MUSI 1102 requires a performance test before a jury. A minimum grade of 70 percent is required for passing this course. Grade P/NP.

MUSI 102_ - Fundamentals of Applied Music II (1)

Individual instruction in the student's principal instrument: one half-hour class per week. Placement in these courses will be by audition. Courses are for the training of students in the Music Department who lack the skills required to enter the first level of applied music in their principal instruments. MUSI 1102 requires a performance test before a jury. A minimum grade of 70 percent is required for passing this course. Grade P/NP.

MUSI 121 - Applied Music for Non-Majors (1)

Designed for students other than music majors who intend to learn to play an instrument and for music students who intend to learn a second instrument. The content of the course will depend on students' ability when they begin the first course in the series.

MUSI 122 - Applied Music for Non-Majors (1)

Designed for students other than music majors who intend to learn to play an instrument and for music students who intend to learn a second instrument. The content of the course will depend on students' ability when they begin the first course in the series.

MUSI 1110 - Rudiments of Music (4)

Study written music, rhythm principles, notes and tones, intervals, scales, triads. Acquire audio, sight-reading and musical dictation skills. Course designed for students with little or no experience in the music field. A minimum grade of 70 percent is required for passing this course. Grade P/NP.

MUSI 1111 - Rudiments and Auditory Training I (2)

Development of auditory skills in sight-reading and musical reading, musical writing, dictation, the principles of the rhythm, notes, tones, intervals, scales and triads. Course for students with little or any experience in the

field of music. The minimum grade to approve this course will be equivalent to C. Requires 15 hours of lecture and 30 hours of lab in auditory training and reading.

Prerequisite: Pass a placement test.

MUSI 1112 - Rudiments and Auditory Training II (2)

Development of auditory skills and sight-singing focused towards the reading and writing of music, the principles of rhythm, musical figures and tones, the intervals, the scales and the triads. Course for students with little or any experience in the field of music. The minimum grade to approve this course will be C. PRequires 15 hours of lecture and 30 of lab.

Prerequisite: MUSI 1110 or pass an audition with 70%.

MUSI 1131 - Guitar: Group Class I (1)

Group instruction for students interested in learning the basic fundamentals of the guitar to enable them to play and read melodies, chords and accompanying patterns. This course is not part of the sequence of courses in classical guitar.

MUSI 1132 - Guitar: Group Class Ii (1)

Group instruction for students interested in learning the basic fundamentals of the guitar to enable them to play and read melodies, chords and accompanying patterns. This course is not part of the sequence of courses in classical guitar.

MUSI 1160 - Vocal Coaching I (1)

Performance of the assigned repertoire following the evaluation criteria of the Jury and Recital Examinations. Includes a repertoire selected for its technical and musical difficulty in accord with the academic progress of the student. Designed for students in the Bachelor's degree in Music whose main instrument is voice. Each course is a continuation of the previous level.

MUSI 1161 - Vocal Coaching II (1)

Performance of the assigned repertoire following the evaluation criteria of the Jury and Recital Examinations. Includes a repertoire selected for its technical and musical difficulty in accord with the academic progress of the student. Designed for students in the Bachelor's degree in Music whose main instrument is voice. Each course is a continuation of the previous level.

MUSI 1162 - Vocal Coaching III (1)

Performance of the assigned repertoire following the evaluation criteria of the Jury and Recital Examinations.

Includes a repertoire selected for its technical and musical difficulty in accord with the academic progress of the student. Designed for students in the Bachelor's degree in Music whose main instrument is voice. Each course is a continuation of the previous level.

MUSI 1163 - Vocal Coaching IV (1)

Performance of the assigned repertoire following the evaluation criteria of the Jury and Recital Examinations. Includes a repertoire selected for its technical and musical difficulty in accord with the academic progress of the student. Designed for students in the Bachelor's degree in Music whose main instrument is voice. Each course is a continuation of the previous level.

MUSI 1164 - Vocal Coaching V (1)

Performance of the assigned repertoire following the evaluation criteria of the Jury and Recital Examinations. Includes a repertoire selected for its technical and musical difficulty in accord with the academic progress of the student. Designed for students in the Bachelor's degree in Music whose main instrument is voice. Each course is a continuation of the previous level.

MUSI 1165 - Vocal Coaching VI (1)

Performance of the assigned repertoire following the evaluation criteria of the Jury and Recital Examinations. Includes a repertoire selected for its technical and musical difficulty in accord with the academic progress of the student. Designed for students in the Bachelor's degree in Music whose main instrument is voice. Each course is a continuation of the previous level.

MUSI 1166 - Vocal Coaching VII (1)

Performance of the assigned repertoire following the evaluation criteria of the Jury and Recital Examinations. Includes a repertoire selected for its technical and musical difficulty in accord with the academic progress of the student. Designed for students in the Bachelor's degree in Music whose main instrument is voice. Each course is a continuation of the previous level.

MUSI 1167 - Vocal Coaching VIII (1)

Performance of the assigned repertoire following the evaluation criteria of the Jury and Recital Examinations. Includes a repertoire selected for its technical and musical difficulty in accord with the academic progress of the student. Designed for students in the Bachelor's degree in Music whose main instrument is voice. Each course is a continuation of the previous level.

MUSI 1168 - Vocal Coaching IX (1)

Performance of the assigned repertoire following the evaluation criteria of the Jury and Recital Examinations. Includes a repertoire selected for its technical and musical difficulty in accord with the academic progress of the student. Designed for students in the Bachelor's degree in Music whose main instrument is voice. Each course is a continuation of the previous level.

MUSI 1169 - Vocal Coaching X (1)

Performance of the assigned repertoire following the evaluation criteria of the Jury and Recital Examinations. Includes a repertoire selected for its technical and musical difficulty in accord with the academic progress of the student. Designed for students in the Bachelor's degree in Music whose main instrument is voice. Each course is a continuation of the previous level.

MUSI 1200 - Chamber Ensemble: Instrumental - Jazz Band (1)

Study of instrumental repertoire for small and medium-size ensembles.

Prerequisite: Admission by audition.

MUSI 1210 - Chamber Ensemble: Instrumental - Jazz Band (1)

Study of instrumental repertoire for small and medium-size ensembles.

Prerequisite: Admission by audition.

MUSI 1220 - Chamber Ensemble: Instrumental - Clarinet (1)

Study of instrumental repertoire for small and medium-size ensembles.

Prerequisite: Admission by audition.

MUSI 1221 - Vocal Chamber Ensemble and Opera Workshop (1)

Study and preparation of choral and written operatic repertoire for different vocal ensembles and categories. Entails learning and execution of the singing roles with emphasis on acting.

Prerequisite: Admission by audition.

MUSI 1222 - Vocal Chamber Ensemble and Opera Workshop (1)

Study and preparation of choral and written operatic

repertoire for different vocal ensembles and categories. Entails learning and execution of the singing roles with emphasis on acting.

Prerequisite: Admission by audition.

MUSI 1230 - Chamber Ensemble: Instrumental - Strings (1)

Study of instrumental repertoire for small and medium-size ensembles.

Prerequisite: Admission by audition.

MUSI 1231 - Concert Band I (1)

Large instrumental ensemble open to music students and to students majoring in other disciplines.

Prerequisite: Admission by audition.

MUSI 1232 - Concert Band II (1)

Large instrumental ensemble open to music students and to students majoring in other disciplines.

Prerequisite: Admission by audition.

MUSI 1240 - Chamber Ensemble: Instrumental - Flute (1)

Study of instrumental repertoire for small and medium-size ensembles.

Prerequisite: Admission by audition.

MUSI 1241 - University Choir I (1)

Large choral ensemble open to music students and students majoring in other disciplines

Prerequisite: Admission by audition.

MUSI 1242 - University Choir II (1)

Large choral ensemble open to music students and students majoring in other disciplines

Prerequisite: Admission by audition.

MUSI 1250 - Chamber Ensemble: Instrumental - Guitar (1)

Study of instrumental repertoire for small and medium-size ensembles.

Prerequisite: Admission by audition.

MUSI 1251 - University Orchestra I (1)

Large instrumental ensemble open to music students and to

students majoring in other disciplines.

Prerequisite: Admission by audition.

MUSI 1252 - University Orchestra II (1)

Large instrumental ensemble open to music students and to students majoring in other disciplines.

Prerequisite: Admission by audition.

MUSI 1260 - Chamber Ensemble: Instrumental - Brass (1)

Study of instrumental repertoire for small and medium-size ensembles.

Prerequisite: Admission by audition.

MUSI 1270 - Chamber Ensemble: Instrumental - Percussion (1)

Study of instrumental repertoire for small and medium-size ensembles.

Prerequisite: Admission by audition.

MUSI 1280 - Chamber Ensemble: Instrumental - Saxophone (1)

Study of instrumental repertoire for small and medium-size ensembles.

Prerequisite: Admission by audition.

MUSI 1311 - Drums I (1)

Study of theoretical-practical knowledge of the rudiments, reading techniques and coordination necessary for the correct execution on the drums.

MUSI 1312 - Drums II (1)

Refinement of the basic skills of execution on the drums. Study of tuning concepts, new rhythms, musical styles, exercising technique, and musical reading incorporating the use of polyrhythm and rhythmic independence.

Prerequisite: MUSI 1311.

MUSI 1401 - Theory and Sight-Reading (2)

Use of sight-reading and musical theory, with emphasis on the development of auditory skills, reading, rhythmic perception, intonation and dictation. Includes the primary study of the formation and connection of chords, their written and auditory identification, analysis and composition. The minimum grade to approve this course will be equivalent to C. Requires 15 hours of lecture and

30 hours of lab in auditory training and reading.

Prerequisite: MUSI 1112 or passing a placement test.

MUSI 1461 - Piano: Group Class I (1)

Course to prepare the student to use the keyboard as a means of practicing, applying and demonstrating the skills and concepts acquired in other courses. Basic principles of performance techniques for the piano, in order to facilitate the reading of rhythms, melodies, chords and accompanying routines.

Prerequisite: MUSI 1110 or passing a placement test.

MUSI 1462 - Piano: Group Class II (1)

Course to prepare the student to use the keyboard as a means of practicing, applying and demonstrating the skills and concepts acquired in other courses. Basic principles of performance techniques for the piano, in order to facilitate the reading of rhythms, melodies, chords and accompanying routines.

Prerequisite: MUSI 1110 or passing a placement test.

MUSI 1701 - Flute (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 1701-1892 - Instrument I, II (1-2 per course)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury.

MUSI   1701, 1702, 2701, 2702, 3701, 3702, 4701, 4702
        FLUTE
MUSI   1711, 1712, 2711, 2712, 3711, 3712, 4711, 4712

OBOE
MUSI 1721, 1722, 2721, 2722, 3721, 3722, 4721, 4722
CLARINET
MUSI 1731, 1732, 2731, 2732, 3731, 3732, 4731, 4732
BASSOON
MUSI 1741, 1742, 2741, 2742, 3741, 3742, 4741, 4742
SAXOPHONE
MUSI 1751, 1752, 2751, 2752, 3751, 3752, 4751, 4752
TRUMPET
MUSI 1761, 1762, 2761, 2762, 3761, 3762, 4761, 4762
HORN
MUSI 1771, 1772, 2771, 2772, 3771, 3772, 4771, 4772
TROMBONE
MUSI 1781, 1782, 2781, 2782, 3781, 3782, 4781, 4782
EUPHONIUM
MUSI 1791, 1792, 2791, 2792, 3791, 3792, 4791, 4792
TUBA
MUSI 1801, 1802, 2801, 2802, 3801, 3802, 4801, 4802
PERCUSSION
MUSI 1811, 1812, 2811, 2812, 3811, 3812, 4811, 4812
PIANO
MUSI 1821, 1822, 2821, 2822, 3821, 3822, 4821, 4822
ORGAN
MUSI 1841, 1842, 2841, 2842, 3841, 3842, 4841, 4842
VOICE
MUSI 1851, 1852, 2851, 2852, 3851, 3852, 4851, 4852
VIOLIN
MUSI 1861, 1862, 2861, 2862, 3861, 3862, 4861, 4862
VIOLA
MUSI 1871, 1872, 2871, 2872, 3871, 3872, 4871, 4872
CELLO
MUSI 1881, 1882, 2881, 2882, 3881, 3882, 4881, 4882
CONTRABASS

MUSI 1891, 1892, 2891, 2892, 3891, 3892, 4891, 4892
CLASSICAL GUITAR

MUSI 1701-4892 - Instrument I to VIII (1-2 per course)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury.

MUSI 1701, 1702, 2701, 2702, 3701, 3702, 4701, 4702
FLUTE

MUSI 1711, 1712, 2711, 2712, 3711, 3712, 4711, 4712
OBOE
MUSI 1721, 1722, 2721, 2722, 3721, 3722, 4721, 4722
CLARINET
MUSI 1731, 1732, 2731, 2732, 3731, 3732, 4731, 4732
BASSOON
MUSI 1741, 1742, 2741, 2742, 3741, 3742, 4741, 4742
SAXOPHONE
MUSI 1751, 1752, 2751, 2752, 3751, 3752, 4751, 4752
TRUMPET
MUSI 1761, 1762, 2761, 2762, 3761, 3762, 4761, 4762
HORN
MUSI 1771, 1772, 2771, 2772, 3771, 3772, 4771, 4772
TROMBONE
MUSI 1781, 1782, 2781, 2782, 3781, 3782, 4781, 4782
EUPHONIUM
MUSI 1791, 1792, 2791, 2792, 3791, 3792, 4791, 4792
TUBA
MUSI 1801, 1802, 2801, 2802, 3801, 3802, 4801, 4802
PERCUSSION
MUSI 1811, 1812, 2811, 2812, 3811, 3812, 4811, 4812
PIANO
MUSI 1821, 1822, 2821, 2822, 3821, 3822, 4821, 4822
ORGAN
MUSI 1841, 1842, 2841, 2842, 3841, 3842, 4841, 4842
VOICE
MUSI 1851, 1852, 2851, 2852, 3851, 3852, 4851, 4852
VIOLIN
MUSI 1861, 1862, 2861, 2862, 3861, 3862, 4861, 4862
VIOLA
MUSI 1871, 1872, 2871, 2872, 3871, 3872, 4871, 4872
CELLO
MUSI 1881, 1882, 2881, 2882, 3881, 3882, 4881, 4882
CONTRABASS

MUSI 1891, 1892, 2891, 2892, 3891, 3892, 4891, 4892
CLASSICAL GUITAR

MUSI 1702 - Flute (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 1711 - Oboe (1 or 2)

Individual instruction on the principal or secondary

instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 1712 - Oboe (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 1721 - Clarinet (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 1722 - Clarinet (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 1731 - Bassoon (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2)

credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 1732 - Bassoon (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 1741 - Saxophone (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 1742 - Saxophone (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 1751 - Trumpet (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a

jury

MUSI 1752 - Trumpet (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 1761 - Horn (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 1762 - Horn (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 1771 - Trombone (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 1772 - Trombone (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 1781 - Euphonium (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 1782 - Euphonium (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 1791 - Tuba (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 1792 - Tuba (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music

or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 1801 - Percussion (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 1802 - Percussion (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 1811 - Piano (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 1812 - Piano (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit

classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 1821 - Organ (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 1822 - Organ (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 1841 - Voice (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 1842 - Voice (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 1851 - Violin (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 1852 - Violin (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 1861 - Viola (1-2)
MUSI 1862 - Viola (1-2)
MUSI 1871 - Cello (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 1872 - Cello (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) creditsper semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 1881 - Contrabass (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 1882 - Contrabass (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 1891 - Classical Guitar (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 1892 - Classical Guitar (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 1901 - Ethnic Percussion I (1)

Application of performance techniques in the use of instruments for ethnic and folklore music. Includes the

refining, projection of sound, memorization and interpretation of basic rhythms from the cultures of regions of Africa, Arabia, Europe, North America and Latin America. Individualized instruction is provided.

MUSI 1902 - Ethnic Percussion II (1)

Emphasis on the application of performance techniques in the use of the musical instruments, ethnic and folkloric rhythms and the musical styles of each area. Individualized instruction is provided.

Prerequisite: MUSI 1901.

MUSI 1991 - Electric Bass I (1)

Individualized introduction to performance on the electric bass. Emphasis on theoretical explanations and practical exercises. Analysis and performance of elementary musical compositions to increase student skills in different rhythms and musical styles.

MUSI 1994 - Electric Bass IV (1)

Individualized introduction to performance on the electric bass. Emphasis on theoretical explanations and practical exercises. Analysis and performance of advanced musical compositions to increase student skills in different rhythm and musical styles.

Prerequisite: MUSI 1993.

MUSI 221 - Applied Music for Non-Majors (1)

Designed for students other than music majors who intend to learn to play an instrument and for music students who intend to learn a second instrument. The content of the course will depend on students' ability when they begin the first course in the series.

MUSI 222 - Applied Music for Non-Majors (1)

Designed for students other than music majors who intend to learn to play an instrument and for music students who intend to learn a second instrument. The content of the course will depend on students' ability when they begin the first course in the series.

MUSI 2011 - Chamber Ensemble and Vocal Instruction I (2)

Preparation and performance of a repertoire that culminates in the musical work production for vocal ensemble with instrumental accompaniment. Intensive individual classes to examine areas of difficulty in the technique of the instrument (diction, sight reading, reading practice, performance). Representative literature of different styles and historical periods will be used.

Available for students of the Bachelor or high school level with some experience in chamber productions with instrumental accompaniment. Consists of vocal ensembles, or combination of instruments and vocal.

Prerequisite: Audition and authorization of the instructor.

MUSI 2012 - Chamber Ensemble and Vocal Instruction II (2)

Preparation and performance of a repertoire that culminates in the musical work production for vocal ensemble with instrumental accompaniment. Intensive individual classes to examine areas of difficulty in the technique of the instrument (diction, sight reading, reading practice, performance). Representative literature of different styles and historical periods will be used. Available for students of the Bachelor or high school level with some experience in chamber productions with instrumental accompaniment. Consists of vocal ensembles, or combination of instruments and vocal.

Prerequisite: Audition and authorization of the instructor.

MUSI 2013 - Chamber Ensemble and Vocal Instruction III (2)

Preparation and performance of a repertoire that culminates in the musical work production for vocal ensemble with instrumental accompaniment. Intensive individual classes to examine areas of difficulty in the technique of the instrument (diction, sight reading, reading practice, performance). Representative literature of different styles and historical periods will be used. Available for students of the Bachelor or high school level with some experience in chamber productions with instrumental accompaniment. Consists of vocal ensembles, or combination of instruments and vocal.

Prerequisite: Audition and authorization of the instructor.

MUSI 2014 - Chamber Ensemble and Vocal Instruction IV (2)

Preparation and performance of a repertoire that culminates in the musical work production for vocal ensemble with instrumental accompaniment. Intensive individual classes to examine areas of difficulty in the technique of the instrument (diction, sight reading, reading practice, performance). Representative literature of different styles and historical periods will be used. Available for students of the Bachelor or high school level with some experience in chamber productions with instrumental accompaniment. Consists of vocal ensembles, or combination of instruments and vocal.

Prerequisite: Audition and authorization of the instructor.

MUSI 2091 - Chamber Ensemble I (1)

Review of technical and interpretative skills using a repertoire for diverse instrumental and vocal combinations. Participation in individual practices and classes that facilitate musical peformance according to the level of technical and musical development of the student.

Prerequisite: Audition and authorization of the instructor.

MUSI 2092 - Chamber Ensemble II (1)

Review of technical and interpretative skills using a repertoire for diverse instrumental and vocal combinations. Participation in individual practices and classes that facilitate musical peformance according to the level of technical and musical development of the student.

Prerequisite: Audition and authorization of the instructor.

MUSI 2093 - Chamber Ensemble III (1)

Review of technical and interpretative skills using a repertoire for diverse instrumental and vocal combinations. Participation in individual practices and classes that facilitate musical peformance according to the level of technical and musical development of the student.

Prerequisite: Audition and authorization of the instructor.

MUSI 2094 - Chamber Ensemble IV (1)

Review of technical and interpretative skills using a repertoire for diverse instrumental and vocal combinations. Participation in individual practices and classes that facilitate musical peformance according to the level of technical and musical development of the student.

Prerequisite: Audition and authorization of the instructor.

MUSI 2095 - Chamber Ensemble V (1)

Review of technical and interpretative skills using a repertoire for diverse instrumental and vocal combinations. Participation in individual practices and classes that facilitate musical peformance according to the level of technical and musical development of the student.

Prerequisite: Audition and authorization of the instructor.

MUSI 2096 - Chamber Ensemble VI (1)

Review of technical and interpretative skills using a repertoire for diverse instrumental and vocal combinations. Participation in individual practices and classes that facilitate musical peformance according to the level of

technical and musical development of the student.

Prerequisite: Audition and authorization of the instructor.

MUSI 2097 - Chamber Ensemble VII (1)

Review of technical and interpretative skills using a repertoire for diverse instrumental and vocal combinations. Participation in individual practices and classes that facilitate musical peformance according to the level of technical and musical development of the student.

Prerequisite: Audition and authorization of the instructor.

MUSI 2098 - Chamber Ensemble VIII (1)

Review of technical and interpretative skills using a repertoire for diverse instrumental and vocal combinations. Participation in individual practices and classes that facilitate musical peformance according to the level of technical and musical development of the student.

Prerequisite: Audition and authorization of the instructor.

MUSI 2221 - Vocal Chamber Ensemble and Opera Workshop (1)

Study and preparation of choral and written operatic repertoire for different vocal ensembles and categories. Entails learning and execution of the singing roles with emphasis on acting.

Prerequisite: Admission by audition.

MUSI 2222 - Vocal Chamber Ensemble and Opera Workshop (1)

Study and preparation of choral and written operatic repertoire for different vocal ensembles and categories. Entails learning and execution of the singing roles with emphasis on acting.

Prerequisite: Admission by audition.

MUSI 2231 - Concert Band III (1)

Large instrumental ensemble open to music students and to students majoring in other disciplines.

Prerequisite: Admission by audition.

MUSI 2232 - Concert Band IV (1)

Large instrumental ensemble open to music students and to students majoring in other disciplines.

Prerequisite: Admission by audition.

MUSI 2241 - University Choir III (1)

Large choral ensemble open to music students and students majoring in other disciplines

Prerequisite: Admission by audition.

MUSI 2242 - University Choir IV (1)

Large choral ensemble open to music students and students majoring in other disciplines

Prerequisite: Admission by audition.

MUSI 2251 - University Orchestra III (1)

Large instrumental ensemble open to music students and to students majoring in other disciplines.

Prerequisite: Admission by audition.

MUSI 2252 - University Orchestra IV (1)

Large instrumental ensemble open to music students and to students majoring in other disciplines.

Prerequisite: Admission by audition.

MUSI 2311 - Drums III (1)

Application of theoretical-practical knowledge of rudiments, techniques and rhythms of the drum in styles of Latin and North American pop music. Emphasis on the development of acquired skills, knowledge of the advanced repertoire of styles, and rhythmical reading at first sight.

Prerequisite: MUSI 1312.

MUSI 2411 - Harmony and Counterpoint I (3)

Detailed study of the formation and linkage of chords, their auditory identification, their analysis and use in accompanying melodies. Includes the dictation of these chords, the intonation of their notes and the melodies they form when linked. Detailed study of the techniques for linking simultaneous melodies, using this material for the practice of sight-reading.

Prerequisite: MUSI 1400.

MUSI 2412 - Harmony and Counterpoint II (3)

Detailed study of the formation and linkage of chords, their auditory identification, their analysis and use in accompanying melodies. Includes the dictation of these chords, the intonation of their notes and the melodies they form when linked. Detailed study of the techniques for linking simultaneous melodies, using this material for the practice of sight-reading.

Prerequisite: MUSI 1400.

MUSI 2470 - Keyboard Harmony (2)

Course designed to enable students to read, construct, listen to, reproduce, analyze, perform and transpose melody and the chord progressions at the keyboard and to apply and demonstrate the concepts learned in other music courses. Selected repertoire of musical compositions that help to develop the above-mentioned skills.

Prerequisite: MUSI 1462.

MUSI 2701 - Flute (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 2701-2892 - Instrument III, IV (1-2 per course)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury.

MUSI	1701, 1702, 2701, 2702, 3701, 3702, 4701, 4702 FLUTE
MUSI	1711, 1712, 2711, 2712, 3711, 3712, 4711, 4712 OBOE
MUSI	1721, 1722, 2721, 2722, 3721, 3722, 4721, 4722 CLARINET
MUSI	1731, 1732, 2731, 2732, 3731, 3732, 4731, 4732 BASSOON
MUSI	1741, 1742, 2741, 2742, 3741, 3742, 4741, 4742 SAXOPHONE
MUSI	1751, 1752, 2751, 2752, 3751, 3752, 4751, 4752 TRUMPET
MUSI	1761, 1762, 2761, 2762, 3761, 3762, 4761, 4762 HORN
MUSI	1771, 1772, 2771, 2772, 3771, 3772, 4771, 4772

TROMBONE
MUSI   1781, 1782, 2781, 2782, 3781, 3782, 4781, 4782
EUPHONIUM
MUSI   1791, 1792, 2791, 2792, 3791, 3792, 4791, 4792
TUBA
MUSI   1801, 1802, 2801, 2802, 3801, 3802, 4801, 4802
PERCUSSION
MUSI   1811, 1812, 2811, 2812, 3811, 3812, 4811, 4812
PIANO
MUSI   1821, 1822, 2821, 2822, 3821, 3822, 4821, 4822
ORGAN
MUSI   1841, 1842, 2841, 2842, 3841, 3842, 4841, 4842
VOICE
MUSI   1851, 1852, 2851, 2852, 3851, 3852, 4851, 4852
VIOLIN
MUSI   1861, 1862, 2861, 2862, 3861, 3862, 4861, 4862
VIOLA
MUSI   1871, 1872, 2871, 2872, 3871, 3872, 4871, 4872
CELLO
MUSI   1881, 1882, 2881, 2882, 3881, 3882, 4881, 4882
CONTRABASS

MUSI   1891, 1892, 2891, 2892, 3891, 3892, 4891, 4892
CLASSICAL GUITAR

MUSI 2702 - Flute (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 2711 - Oboe (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 2712 - Oboe (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music

or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 2721 - Clarinet (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 2722 - Clarinet (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 2731 - Bassoon (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 2732 - Bassoon (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit

classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 2741 - Saxophone (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 2742 - Saxophone (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 2751 - Trumpet (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 2752 - Trumpet (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 2761 - Horn (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 2762 - Horn (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 2771 - Trombone (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 2772 - Trombone (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 2781 - Euphonium (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music

or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 2782 - Euphonium (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 2791 - Tuba (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 2792 - Tuba (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 2801 - Percussion (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit

classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 2802 - Percussion (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 2811 - Piano (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are requiredfor students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 2812 - Piano (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 2821 - Organ (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 2822 - Organ (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 2841 - Voice (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 2842 - Voice (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 2851 - Violin (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 2852 - Violin (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music

or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 2861 - Viola (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 2862 - Viola (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 2871 - Cello (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 2872 - Cello (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit

classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 2881 - Contrabass (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 2882 - Contrabass (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 2891 - Classical Guitar (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 2892 - Classical Guitar (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 2901 - Ethnic Percussion III (1)

Refinement of performance techniques in the use of musical instruments ethnic and folkloric, rhythms and the musical styles of each area. Individualized instruction is provided.

Prerequisite: MUSI 1902.

MUSI 321 - Applied Music for Non-Majors (1)

Designed for students other than music majors who intend to learn to play an instrument and for music students who intend to learn a second instrument. The content of the course will depend on students' ability when they begin the first course in the series.

MUSI 322 - Applied Music for Non-Majors (1)

Designed for students other than music majors who intend to learn to play an instrument and for music students who intend to learn a second instrument. The content of the course will depend on students' ability when they begin the first course in the series.

MUSI 3030 - Music and Research: Fieldwork (3)

Theoretical analysis of the methodologies of field research. Application of the practices of ethnographic interviews, observation and participation in public activities of ethnographic value.

Prerequisite: MUSI 2080.

MUSI 3031 - Popular Music Workshop II (1)
MUSI 3032 - Popular Music Workshop III (1)
MUSI 3070 - Jazz in Guitar (1)

Acquaintance with modern codes used in jazz, after a study of modern musical nomenclature.

MUSI 3130 - Popular Music Workshop I (1)

Exploration of repertoire in diverse styles for sets of pop music and the development of technical and interpretative skills. Includes examination of practice techniques, performance of pieces of several genres, adjustment, and improvisation. Available for students with a major in music and for other disciplines. Prerequisite: Pass an audition and obtain consent of the instructor. Requires two hours of practice weekly.

MUSI 3131 - Popular Music Workshop II (1)

Exploration of the repertoire in diverse styles for ensembles of pop music and the development of technical and interpretative skills. Includes review of practice techniques, performance of several genres, arrangements,

and improvisation. Available for students with a major in music and in other disciplines. Requires additional hours of practice.

Prerequisite: Audition and authorization of the instructor.

MUSI 3132 - Popular Music Workshop III (1)

Exploration of the repertoire in diverse styles for ensembles of pop music and the development of technical and interpretative skills. Includes review of practice techniques, performance of several genres, arrangements, and improvisation. Available for students with a major in music and in other disciplines. Requires additional hours of practice.

Prerequisite: Audition and authorization of the instructor.

MUSI 3133 - Popular Music Workshop IV (1)

Exploration of the repertoire in diverse styles for ensembles of pop music and the development of technical and interpretative skills. Includes review of practice techniques, performance of several genres, arrangements, and improvisation. Available for students with a major in music and in other disciplines. Requires additional hours of practice.

Prerequisite: Audition and authorization of the instructor.

MUSI 3221 - Vocal Chamber Ensemble and Opera Workshop (1)

Study and preparation of choral and written operatic repertoire for different vocal ensembles and categories. Entails learning and execution of the singing roles with emphasis on acting.

Prerequisite: Admission by audition.

MUSI 3222 - Vocal Chamber Ensemble and Opera Workshop (1)

Study and preparation of choral and written operatic repertoire for different vocal ensembles and categories. Entails learning and execution of the singing roles with emphasis on acting.

Prerequisite: Admission by audition.

MUSI 3231 - Concert Band V (1)

Large instrumental ensemble open to music students and to students majoring in other disciplines.

Prerequisite: Admission by audition.

MUSI 3232 - Concert Band VI (1)

Large instrumental ensemble open to music students and to students majoring in other disciplines.

Prerequisite: Admission by audition.

MUSI 3241 - University Choir V (1)

Large choral ensemble open to music students and students majoring in other disciplines

Prerequisite: Admission by audition.

MUSI 3242 - University Choir VI (1)

Large choral ensemble open to music students and students majoring in other disciplines

Prerequisite: Admission by audition.

MUSI 3251 - University Orchestra V (1)

Large instrumental ensemble open to music students and to students majoring in other disciplines.

Prerequisite: Admission by audition.

MUSI 3252 - University Orchestra VI (1)

Large instrumental ensemble open to music students and to students majoring in other disciplines.

Prerequisite: Admission by audition.

MUSI 3311 - Western Music: History and Literature I (3)

Survey of the development of music from its primitive beginnings to the present. The first course includes the history and literature of music up to 1750.

MUSI 3312 - Western Music: History and Literature II (3)

Survey of the development of music from its primitive beginnings to the present. The second course covers the period from 1750 to the present.

MUSI 3320 - History of Puerto Rican And Latin American Music (2)

Overview of the origins anddevelopment of Puerto Rican music. Interaction of Puerto Rican and Latin American music.

MUSI 3440 - Form and Analysis (3)

The musical structures of various historical periods based on the parameters of rhythm, melody and accompaniment

already established in the courses on theory and harmony and counterpoint sight-reading.

Prerequisite: MUSI 2412.

MUSI 3471 - Saxophone (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 3472 - Saxophone (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 3701 - Flute (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 3701-3892 - Instrument V, VI (1-2 per course)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury.

MUSI   1701, 1702, 2701, 2702, 3701, 3702, 4701, 4702
FLUTE

MUSI   1711, 1712, 2711, 2712, 3711, 3712, 4711, 4712
OBOE

MUSI   1721, 1722, 2721, 2722, 3721, 3722, 4721, 4722
CLARINET

MUSI   1731, 1732, 2731, 2732, 3731, 3732, 4731, 4732
BASSOON

MUSI   1741, 1742, 2741, 2742, 3741, 3742, 4741, 4742
SAXOPHONE

MUSI   1751, 1752, 2751, 2752, 3751, 3752, 4751, 4752
TRUMPET

MUSI   1761, 1762, 2761, 2762, 3761, 3762, 4761, 4762
HORN

MUSI   1771, 1772, 2771, 2772, 3771, 3772, 4771, 4772
TROMBONE

MUSI   1781, 1782, 2781, 2782, 3781, 3782, 4781, 4782
EUPHONIUM

MUSI   1791, 1792, 2791, 2792, 3791, 3792, 4791, 4792
TUBA

MUSI   1801, 1802, 2801, 2802, 3801, 3802, 4801, 4802
PERCUSSION

MUSI   1811, 1812, 2811, 2812, 3811, 3812, 4811, 4812
PIANO

MUSI   1821, 1822, 2821, 2822, 3821, 3822, 4821, 4822
ORGAN

MUSI   1841, 1842, 2841, 2842, 3841, 3842, 4841, 4842
VOICE

MUSI   1851, 1852, 2851, 2852, 3851, 3852, 4851, 4852
VIOLIN

MUSI   1861, 1862, 2861, 2862, 3861, 3862, 4861, 4862
VIOLA

MUSI   1871, 1872, 2871, 2872, 3871, 3872, 4871, 4872
CELLO

MUSI   1881, 1882, 2881, 2882, 3881, 3882, 4881, 4882
CONTRABASS

MUSI   1891, 1892, 2891, 2892, 3891, 3892, 4891, 4892
CLASSICAL GUITAR

MUSI 3702 - Flute (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 3711 - Oboe (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 3712 - Oboe (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 3721 - Clarinet (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly;the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 3722 - Clarinet (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 3731 - Bassoon (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 3732 - Bassoon (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 3751 - Trumpet (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 3752 - Trumpet (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 3761 - Horn (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit

classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 3762 - Horn (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 3771 - Trombone (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 3772 - Trombone (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 3781 - Euphonium (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 3782 - Euphonium (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 3791 - Tuba (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 3792 - Tuba (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 3801 - Percussion (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 3802 - Percussion (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music

or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 3811 - Piano (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 3812 - Piano (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 3821 - Organ (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 3822 - Organ (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit

classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 3841 - Voice (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 3842 - Voice (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 3851 - Violin (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for studentsin applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 3852 - Violin (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 3861 - Viola (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 3862 - Viola (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 3871 - Cello (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 3872 - Cello (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 3881 - Contrabass (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 3882 - Contrabass (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1)credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 3891 - Classical Guitar (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 3892 - Classical Guitar (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 3975 - Special Topics (1 to 6)

Analysis and discussion of topics related to music that combine new ideas and knowledge not included in regular courses.

MUSI 421 - Applied Music for Non-Majors (1)

Designed for students other than music majors who intend to learn to play an instrument and for music students who intend to learn a second instrument. The content of the course will depend on students' ability when they begin the first course in the series.

MUSI 422 - Applied Music for Non-Majors (1)

Designed for students other than music majors who intend to learn to play an instrument and for music students who intend to learn a second instrument. The content of the course will depend on students' ability when they begin the first course in the series.

MUSI 4221 - Vocal Chamber Ensemble and Opera Workshop (1)

Study and preparation of choral and written operatic repertoire for different vocal ensembles and categories. Entails learning and execution of the singing roles with emphasis on acting.

Prerequisite: Admission by audition.

MUSI 4222 - Vocal Chamber Ensemble and Opera Workshop (1)

Study and preparation of choral and written operatic repertoire for different vocal ensembles and categories. Entails learning and execution of the singing roles with emphasis on acting.

Prerequisite: Admission by audition.

MUSI 4231 - Concert Band VII (1)

Large instrumental ensemble open to music students and to students majoring in other disciplines.

Prerequisite: Admission by audition.

MUSI 4232 - Concert Band VIII (1)

Large instrumental ensemble open to music students and to students majoring in other disciplines.

Prerequisite: Admission by audition.

MUSI 4241 - University Choir VII (1)

Large choral ensemble open to music students and students majoring in other disciplines

Prerequisite: Admission by audition.

MUSI 4242 - University Choir VIII (1)

Large choral ensemble open to music students and students majoring in other disciplines

Prerequisite: Admission by audition.

MUSI 4251 - University Orchestra VII (1)

Large instrumental ensemble open to music students and to students majoring in other disciplines.

Prerequisite: Admission by audition.

MUSI 4252 - University Orchestra VIII (1)

Large instrumental ensemble open to music students and to students majoring in other disciplines.

Prerequisite: Admission by audition.

MUSI 4431 - Orchestration and Arranging I (2)

Study and application of the basic techniques in reproducing and adapting original or existing music for solo instruments or varied ensembles, such as choirs, bands, and orchestras. Includes the use of melodic and harmonic dictation and the use of transposition. In addition, a detailed study of the range of each instrument, its particular timbre and the sound combinations resulting from the merging of these instruments. Laboratory hours are required for both courses.

Prerequisite: MUSI 3440.

MUSI 4432 - Orchestration and Arranging II (2)

Study and application of the basic techniques in reproducing and adapting original or existing music for solo instruments or varied ensembles, such as choirs, bands, and orchestras. Includes the use of melodic and harmonic dictation and the use of transposition. In addition, a detailed study of the range of each instrument, its particular timbre and the sound combinations resulting from the merging of these instruments. Laboratory hours are required for both courses.

Prerequisite: MUSI 3440.

MUSI 4451 - Composition I (3)

Composition of new musical pieces written for any kind of instrument or ensemble.

Prerequisite: Interview with the instructor.

MUSI 4452 - Composition II (3)

Composition of new musical pieces written for any kind of

instrument or ensemble.

Prerequisite: Interview with the instructor.

MUSI 4500 - Conducting I (3)

Basic course in training the student in the principles and practice of conducting.

Prerequisite: Permission from the instructor.

MUSI 4510 - Conducting II: Choral (2)

Use of advanced methods of choral conducting designed for prospective choir directors. Includes materials, repertoire and administration.

Prerequisite: MUSI 4500.

MUSI 4520 - Conducting II: Instrumental (2)

Use of advanced methods of instrumental conducting designed for prospective band and orchestra conductors. Includes materials, repertoire and administration.

Prerequisite: MUSI 4500.

MUSI 4600 - Foundations of Audio-Recording (3)

Experimentation with resources and techniques of recording, edition, production and mastering of audio. Includes the examination of acoustic materials for the design of facilities, theories, use and location of microphones, applications and recording apparatuses used in a musical production.

Prerequisite: MUED 4436.

MUSI 4701 - Flute (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 4701-4892 - Instrument VII, VIII (1-2 per course)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit

per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury.

MUSI	1701, 1702, 2701, 2702, 3701, 3702, 4701, 4702 FLUTE
MUSI	1711, 1712, 2711, 2712, 3711, 3712, 4711, 4712 OBOE
MUSI	1721, 1722, 2721, 2722, 3721, 3722, 4721, 4722 CLARINET
MUSI	1731, 1732, 2731, 2732, 3731, 3732, 4731, 4732 BASSOON
MUSI	1741, 1742, 2741, 2742, 3741, 3742, 4741, 4742 SAXOPHONE
MUSI	1751, 1752, 2751, 2752, 3751, 3752, 4751, 4752 TRUMPET
MUSI	1761, 1762, 2761, 2762, 3761, 3762, 4761, 4762 HORN
MUSI	1771, 1772, 2771, 2772, 3771, 3772, 4771, 4772 TROMBONE
MUSI	1781, 1782, 2781, 2782, 3781, 3782, 4781, 4782 EUPHONIUM
MUSI	1791, 1792, 2791, 2792, 3791, 3792, 4791, 4792 TUBA
MUSI	1801, 1802, 2801, 2802, 3801, 3802, 4801, 4802 PERCUSSION
MUSI	1811, 1812, 2811, 2812, 3811, 3812, 4811, 4812 PIANO
MUSI	1821, 1822, 2821, 2822, 3821, 3822, 4821, 4822 ORGAN
MUSI	1841, 1842, 2841, 2842, 3841, 3842, 4841, 4842 VOICE
MUSI	1851, 1852, 2851, 2852, 3851, 3852, 4851, 4852 VIOLIN
MUSI	1861, 1862, 2861, 2862, 3861, 3862, 4861, 4862 VIOLA
MUSI	1871, 1872, 2871, 2872, 3871, 3872, 4871, 4872 CELLO
MUSI	1881, 1882, 2881, 2882, 3881, 3882, 4881, 4882 CONTRABASS
MUSI	1891, 1892, 2891, 2892, 3891, 3892, 4891, 4892 CLASSICAL GUITAR

MUSI 4702 - Flute (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are

required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 4711 - Oboe (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 4712 - Oboe (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 4721 - Clarinet (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 4722 - Clarinet (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission

to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 4731 - Bassoon (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 4732 - Bassoon (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 4741 - Saxophone (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 4742 - Saxophone (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 4751 - Trumpet (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 4752 - Trumpet (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 4761 - Horn (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 4762 - Horn (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 4771 - Trombone (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music

or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 4772 - Trombone (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 4781 - Euphonium (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 4782 - Euphonium (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 4791 - Tuba (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit

classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 4792 - Tuba (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semesterfor students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 4801 - Percussion (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 4802 - Percussion (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 4811 - Piano (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 4812 - Piano (1 or 2)

Individual instruction onthe principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 4821 - Organ (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 4822 - Organ (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 4841 - Voice (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 4842 - Voice (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music

or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 4851 - Violin (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 4852 - Violin (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 4861 - Viola (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 4862 - Viola (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit

classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 4871 - Cello (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 4872 - Cello (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 4881 - Contrabass (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 4882 - Contrabass (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 4891 - Classical Guitar (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 4892 - Classical Guitar (1 or 2)

Individual instruction on the principal or secondary instrument of the student majoring either in applied music or in music education. Two (2) credits per semester are required for students in applied music and one (1) credit per semester for students in music education. Two (2) credit classes require one hour weekly; the one (1) credit classes require one half-hour lesson per week. Admission to each series of courses depends on an audition. All the courses ending in digit 2 require a practical test before a jury

MUSI 4900 - Recital (2)

Preparation for and performance at a public recital. Audition before a jury is required prior to the recital.

MUSI 4901 - Recital II (2)

Preparation and performance of a public recital. Includes selection of a representative repertoire of different historical periods, analysis of composition styles and interpretation. Requires approval of a faculty jury before the recital.

Prerequisite: MUSI 4900 and authorization of the faculty of applied music.

MUSI 703 - Fundamentals: Vocal I, II (3)

Review of the fundamentals of vocal performance, such as posture, relaxation, the support and control of breathing, the production of sound, diction and the reading of music. Designed for students with little or no experience in the field of music. Requires 45 hours of lecture-lab.

Prerequisite: Pass a placement test or audition.

MUSI 704 - Fundamentals: Vocal I, II (3)

Review of the fundamentals of vocal performance, such as posture, relaxation, the support and control of breathing, the production of sound, diction and the reading of music.

Designed for students with little or no experience in the field of music. Requires 45 hours of lecture-lab.

Prerequisite: Pass a placement test or audition.

MUSI 713 - Fundamentals: Instruments I, II (3)

Review of the fundamentals of instrumental performance: posture, relaxation, the support and control of breathing, the production and support of sound, the techniques and the rudiments of percussion, and the reading of music. Designed for students with little or no experience in the field of music, assigned to the course by audition or by a placement test. Requires 45 hours of lecture-lab.

Prerequisite: Pass a placement test or audition.

MUSI 714 - Fundamentals: Instruments I, II (3)

Review of the fundamentals of instrumental performance: posture, relaxation, the support and control of breathing, the production and support of sound, the techniques and the rudiments of percussion, and the reading of music. Designed for students with little or no experience in the field of music, assigned to the course by audition or by a placement test. Requires 45 hours of lecture-lab.

Prerequisite: Pass a placement test or audition.

MUSI 723 - Fundamentals: Strings I, II (3)

Review of the fundamentals of string instrument performance, such as posture, relaxation, the use of the arc, the production of sound, the positions, the refining and the reading of music. Designed for students with little or no experience in the field of music. Requires 45 hours of lecture-lab.

Prerequisite: Pass a placement test or audition.

MUSI 724 - Fundamentals: Strings I, II (3)

Review of the fundamentals of string instrument performance, such as posture, relaxation, the use of the arc, the production of sound, the positions, the refining and the reading of music. Designed for students with little or no experience in the field of music. Requires 45 hours of lecture-lab.

Prerequisite: Pass a placement test or audition.

MUSIC - Popular Music

MUSIC 1122 - Historic Panorama of Music I (3)

Panoramic view of the history of music in Europe and the Americas. Study of the origin and development of the

various musical expressions and their international manifestations. Analysis of the sociocultural, political and economic aspects that influence its creation, interpretation and dissemination. Discussion of the influence of technology and globalization on musical practices and performances.

MUSIC 1123 - Historic Panorama of Music II (3)

Panoramic view of the history of Puerto Rican music. Study of the origin and development of the various musical expressions in Puerto Rico and their international manifestations. Analysis of the sociocultural, political and economic aspects that affect the creation, interpretation and dissemination of music in Puerto Rico. Discussion on the influence of technology and globalization on musical practices and performances on the Island.

MUSIC 1126 - Christian Music History (2)

Analysis of the historical, musical and theological aspects and the origin and development of Christian music as well as the practice and its trajectory within the liturgical framework.

Prerequisite: MUSI 0532.

MUSIC 1323 - Instrumental Ensemble I (2)

Practices in supervise rehearsals under the guidance of the group director, for a concert repertoire selected according to the levels and to nature of the group. Presentation of the repertoire in a public concert at the end of the academic term.

MUSIC 1324 - Instrumental Ensemble II (2)

Practices in supervise rehearsals under the guidance of the group director, for a concert repertoire selected according to the levels and to nature of the group. Presentation of the repertoire in a public concert at the end of the academic term.

Prerequisite: MUSI 1323 or its equivalent.

MUSIC 1333 - Choral Ensemble I (2)

Rehearsals of (choral) repertoire under the guidance of the group director in accordance to the levels of the students. Presentation of a public concert at the end of the academic term.

MUSIC 1334 - Choral Ensemble II (2)

Rehearsals of (choral) repertoire under the guidance of the group director in accordance to the levels of the students. Presentation of a public concert at the end of the academic term.

Prerequisite: MUSI 1333 or its equivalent.

MUSIC 1501 - Flute I (3)

Study of the techniques of the flute, sound projection, memorization and interpretation of musical pieces of medium difficulty, and the development of reading at first sight. Grade P/NP.

Prerequisite: MUSI 0502 or placement by audition or by validation.

MUSIC 1502 - Flute II (3)

Development of the techniques, sound production and proyection and the repertoire of the flute. Introduction to vibrato and double tonguing, memorization and interpretation of musical pieces of medium difficulty and reading at first sight. Grade P/NP.

Prerequisite: MUSI 1501.

MUSIC 1511 - Piano I (3)

Study of the techniques of the piano, memorization and interpretation of musical pieces of medium difficulty and the development of reading at first sight. Grade P/NP.

Prerequisite: MUSI 0512 or placement by audition or by validation.

MUSIC 1512 - Piano II (3)

Development of the technique of the piano, the memorization of pieces of medium difficulty, the development of reading at first sight, the accompaniment in various musical genres and the application of improvisation techniques. Grade: P/NP.

Prerequisite: MUSI 1511.

MUSIC 1521 - Puerto Rican Cuatro I (3)

Study of the technique of the Puerto Rican cuatro, mastery of the plectrum non-adjacent strings and in the repertoire of the instrument. Grade P/NP.

Prerequisite: MUSI 0522 or placement by audition or by validation.

MUSIC 1522 - Puerto Rican Cuatro II (3)

Development of the technique of the Puerto Rican cuatro and an extension of its repertoire. Grade P/NP.

Prerequisite: MUSI 1521.

MUSIC 1531 - Theory and Sight Singing I (3)

Advanced study of theory and sight singing. The construction, intonation and auditory recognition of the sixth intervals and the application of jazz elements such as major scale modes are added. Grade: P/NP.

Prerequisite: MUSI 0532 or placement by audition or by validation.

MUSIC 1532 - Theory and Sight Singing II (3)

Deep study of theory and sight singing. The intonation and auditory recognition of the 7th and tritone intervals, the reading in Do keys and the application of the melodic minor scale modes are added. Grade: P/NP.

Prerequisite: MUSI 1531 or its equivalent.

MUSIC 1541 - Saxophone I (3)

Study of techniques of the saxophone, sound projection, memorization and interpretation of pieces of medium difficulty and the development of reading at first sight. Grade P/NP.

Prerequisite: MUSI 0542 or placement by audition or by validation.

MUSIC 1542 - Saxophone II (3)

Development of the technique of the saxophone and the sound production and projection. Introduction to vibrato, memorization and the interpretation of musical pieces of medium and advanced difficulty and to reading at first sight. Grade: P/NP.

Prerequisite: MUSI 1541.

MUSIC 1551 - Trumpet I (3)

Study of the technique of the trumpet, sound projection, memorization and interpretation of pieces of medium difficulty and the development of reading at first sight. Grade: P/NP.

Prerequisite: MUSI 0552 or placement by audition or by validation.

MUSIC 1552 - Trumpet II (3)

Development of the technique of the trumpet and the sound production and projection. Introduction to vibrato, the extension of the register, the memorization, and the interpretation of musical pieces of medium and advanced difficulty and reading at first sight. Grade: P/NP.

Prerequisite: MUSI 1551.

MUSIC 1563 - Group Piano I (2)

Study of the keyboard as a working instrument; teaching for the development of skills, such as scales and basic arpeggios and notions of harmony on the keyboard.

MUSIC 1564 - Group Piano II (2)

Development of keyboard skills as a working instrument. Study of minor scales (harmonic and melodic), minor arpeggios and 7th chords.

Prerequisite: MUSI 1563.

MUSIC 1571 - Trombone I (3)

Study of the technique of the trombone, sound projection, memorization and interpretation of pieces of the medium difficulty and the development of reading at first sight. Grade P/NP.

Prerequisite: MUSI 0572 or placement by audition or by validation.

MUSIC 1572 - Trombone II (3)

Development of the technique of the trombone and the sound production and projection. Introduction to vibrato, extension of the register, memorization and interpretation of musical pieces of medium and advanced difficulty and reading at first sight. Grade: P/NP.

Prerequisite: MUSI 1571.

MUSIC 1581 - Bass I (3)

Study of the technique of the bass. Introduction to reading at first sight and the technique of creating low-bass lines of the walking bass type. Grade: P/NP.

Prerequisite: MUSI 0582 or placement by audition or by validation.

MUSIC 1582 - Bass II (3)

Development of the technique of the bass and reading at first sight of advanced difficulty in popular music such as salsa, funk, jazz, samba and fusion and the role of bass in these styles. Grade P/NP.

Prerequisite: MUSI 1581.

MUSIC 1591 - Guitar I (3)

Study of the technique of the guitar, of diapason and the use of the pick. Introduction to reading at first sight and the knowledge of charts of popular music for the principal instrument. Grade: P/NP.

Prerequisite: MUSI 0592 or placement by audition or by validation.

MUSIC 1592 - Guitar II (3)

Development of the technique of the guitar, reading at first sight and the extension of the musical repertoire. Grade P/NP.

Prerequisite: MUSI 1591.

MUSIC 1601 - Drums I (3)

Study of the technique of the drums, musical reading, accompaniment skills and improvisation in different styles. Grade: P/NP.

Prerequisite: MUSI 0602 or placement by audition or by validation.

MUSIC 1602 - Drums II (3)

Development of the technique of the drums with emphasis on music reading, accompaniment and improvisation in diverse jazz styles, such as blues and 3/4 forms. Grade: P/NP.

Prerequisite: MUSI 1601.

MUSIC 1611 - Percussion I (3)

Study of the technique of the percussion. Emphasis in reading at first sight, techniques and study of simple styles of popular music. Grade: P/NP.

Prerequisite: MUSI 0612 or placement by audition or by validation.

MUSIC 1612 - Percussion II (3)

Development of the technique of the precussion instrument in styles such as salsa, merengue, funk, jazz and samba. Emphasis on reading more advanced rhythms. Grade: P/NP.

Prerequisite: MUSI 1611.

MUSIC 1631 - Violin I (3)

Study of the techniques of the violin. Emphasis in the interpretation and musical reading for its performance in pop music and jazz. Grade: P/NP.

Prerequisite: MUSI 0632 or placement by audition or by validation.

MUSIC 1632 - Violin II (3)

Development of the technique, the interpretation and musical reading for the execution of the violin in pop music and jazz. Grade: P/NP.

Prerequisite: MUSI 1631.

MUSIC 1641 - Voice I (3)

Study of the vocal technique: posture, breath control, sound projection, diction and repertoire. Grade: P/NP.

Prerequisite: MUSI 0642 or placement by audition or by validation.

MUSIC 1642 - Voice II (3)

Development of the vocal technique: posture, breath control, sound projection, diction by means of an extensive literature. Grade: P/NP.

Prerequisite: MUSI 1641.

MUSIC 1651 - Viola I (3)

Study of the technique of the viola. Emphasis in the interpretation and musical reading for its performance in pop music and jazz. Grade: P/NP.

Prerequisite: MUSI 0652 or placement by audition or by validation.

MUSIC 1652 - Viola II (3)

Development of the techniques of the viola. Emphasis in the interpretation and musical reading for its performance in pop music and jazz. Grade: P/NP.

Prerequisite: MUSI 1651.

MUSIC 1661 - Group Guitar I (2)

Introduction to the study of the guitar technique. Study of the basic skills in the performance applied to the instrument, correct technique of both hands, production of a purified sound, study of majors and minor scales, interpretation of studies to develop the technique and study of simple pieces.

MUSIC 1662 - Group Guitar II (2)

Designed for students who continue learning the technique of the guitar. Study of the basic skills in the performance applied to the instrument, correct technique of both hands, production of a purified sound, study of majors and minor scales, interpretation of studies to develop the technique and study of simple pieces.

Prerequisite: MUSI 1661.

MUSIC 1671 - Cello I (3)

Study of the technique of the cello. Emphasis in the interpretation and musical reading for its performance in pop music and jazz. Grade: P/NP.

Prerequisite: MUSI 0672 or placement by audition or by validation.

MUSIC 1672 - Cello II (3)

Development of the technique of the cello. Emphasis in the interpretation and musical reading for its performance in pop music and jazz. Grade: P/NP.

Prerequisite: MUSI 1671.

MUSIC 2000 - Digital Musical Notation (3)

Systematic study of the program Sibelius, designed for the musical notation in computer.

MUSIC 2020 - Liturgical Function of Music (2)

Comprehensive survey of sacred music. Analysis of musical development in the church and the most representative traditions, as well as their biblical, theological and historical bases. Appraisal of the influences of commercial religious music and its sociological elements and the practical aspects of the use of music in liturgy.

Prerequisite: MUSI 0532.

MUSIC 2030 - Choral Directing and Management (3)

Study of choral directing techniques, rehearsal methodology, selection of the repertoire and the organization of a choir or choral programs.

Prerequisite: MUSI 0532.

MUSIC 2040 - Instrumental Directing and Management (3)

Study of directing techniques and rehearsal methodology for different instrumental configurations, such as: orchestra, band, minstrel, bells choir or ensemble. Recognition of their register and positions in the different instruments.

Prerequisite: MUSI 0532.

MUSIC 2050 - Sacred Music Ensemble (2)

Interpretation of a repertoire of sacred music that includes traditional and contemporary expressions.

Prerequisite: MUSI 0532.

MUSIC 2060 - Anthropology and History of Music (3)

Introduction to the study of the genesis and development of historical and anthropological studies of music. Comprehensive and comparative review of the investigative and interpretative traditions in anthropology and musical history in Europe and the Americas from the nineteenth century to the present.

Prerequisite: MUSI 1123.

MUSIC 2070 - Musical Research Theories and Methods (3)

Identification of methods and theories of research in anthropology and musical history. Basic skills development in academic research: familiarization with library operation and library databanks, as well as application programs of bibliographical and documentary organization. Working with quotation styles, the creation of bibliographies and academic writing formats used in the fields of anthropology and musical history.

Prerequisite: MUSI 2060.

MUSIC 2080 - Paradigms in Anthropology and Music History (3)

Reading of exemplary works in the anthropology and music history disciplines. Comparative analysis of the researchers in Europe and the Americas and of their writings, from the nineteenth century to the present.

Prerequisite: MUSI 2060.

MUSIC 2326 - Instrumental Ensemble III (2)

Directed practices under the guidance of the group director, a concert repertoire selected according to the levels and the nature of the groups. Presentation of the repertoire in a public concert at the end of the academic term.

Prerequisite: MUSI 1334 or its equivalent.

MUSIC 2327 - Instrumental Ensemble IV (2)

Directed practices, under the guidance of the group director, a concert repertoire selected according to the levels and the nature of the groups. Presentation of the repertoire in a public concert at the end of the academic term.

Prerequisite: MUSI 2326 or its equivalent.

MUSIC 2335 - Choral Ensemble III (2)

Directed practices, under the trusteeship of the group

director, a concert repertoire selected according to the levels and the nature of the groups. Presentation of the repertoire in a public concert at the end of the academic term.

Prerequisite: MUSI 1333 or its equivalent.

MUSIC 2336 - Choral Ensemble IV (2)

Directed practices, under the guidance of the group director, a concert repertoire selected according to the levels and the nature of the groups. Presentation of the repertoire in a public concert at the end of the academic term.

Prerequisite: MUSI 2335 or its equivalent.

MUSIC 2503 - Flute III (3)

Intermediate study of the technique of the flute. Development of reading at first sight, interpretation of advanced repertoire and improvisation techniques. Grade: P/NP.

Prerequisite: MUSI 1502.

MUSIC 2504 - Flute IV (3)

Advanced study of the technique of the f lute with emphasis on improvisation and the repertoire. Grade: P/NP.

Prerequisite: MUSI 2503.

MUSIC 2513 - Piano III (3)

Intermediate study of the technique of the piano. Emphasis on the memorization of pieces of advanced difficulty, the development of reading at first sight, the accompaniment skill in various musical genres and the application of improvisation techniques. Grade: P/NP.

Prerequisite: MUSI 1512.

MUSIC 2514 - Piano IV (3)

Advanced study of the technique and interpretation of the piano. Emphasis on the study of technical exercises, the memorization of pieces of advanced difficulty, the development of reading at first sight and accompaniment. Application of improvisation techniques in various musical genres. Grade: P/NP.

Prerequisite: MUSI 2513.

MUSIC 2523 - Puerto Rican Cuatro III (3)

Intermediate study of the technique of the Puerto Rican cuatro. Emphasis on improvisation and the repertoire.

Grade: P/NP.

Prerequisite: MUSI 1522.

MUSIC 2524 - Puerto Rican Cuatro IV (3)

Advanced study of the technique of the Puerto Rican cuatro. Emphasis on advanced improvisation and extension of the repertoire. Grade: P/NP.

Prerequisite: MUSI 2523.

MUSIC 2531 - Improvisation I (3)

Introductory study to the art of musical improvisation with emphasis on the styles of Jazz and Afro-Caribbean music. The basic techniques of improvisation on simple pitch or modal progressions will be emphasized. Analysis and transcription of solos.

MUSIC 2532 - Improvisation II (3)

Continuation of the study begun in the course Improvisation I. Emphasis on the review and internalization of the concepts presented in the previous course and the presentation of new techniques and resources that expand the previous ones.

Prerequisite: MUSI 2531.

MUSIC 2533 - Improvisation III (3)

Study of the advanced techniques of improvisation accessible to all harmonic and melodic instruments. This extends up to atonal improvisation (free), arbitrary and other sources of this art derived from classic or popular contemporary music.

Prerequisite: MUSI 2532.

MUSIC 2543 - Saxophone III (3)

Intermediate study of the technique of the saxophone. Emphasis on reading at first sight, interpretation of an advanced repertoire and of techniques for improvisation. Grade: P/NP.

Prerequisite: MUSI 1542.

MUSIC 2544 - Saxophone IV (3)

Advanced study of the technique of the saxophone. Emphasis on improvisation and the repertoire. Grade: P/NP.

Prerequisite: MUSI 2543.

MUSIC 2553 - Trumpet III (3)

Intermediate study of the technique of the trumpet. Emphasis on reading at first sight, the interpretation of an advanced repertoire and improvisation techniques. Grade: P/NP.

Prerequisite: MUSI 1552.

MUSIC 2554 - Trumpet IV (3)

Advanced study of the technique of the trumpet. Emphasis on sound production, reading at first sight, expansion of the register and the repertoire and improvisation. Grade: P/NP.

Prerequisite: MUSI 2553.

MUSIC 2573 - Trombone III (3)

Intermediate study of the technique of the trombone. Emphasis on reading at first sight, interpretation of advanced repertoire and improvisation techniques. Grade: P/NP.

Prerequisite: MUSI 1572.

MUSIC 2574 - Trombone IV (3)

Advanced study of the techniques of the trombone. Emphasis on sound production and projection, reading at first sight, expansion of the register and the repertoire and improvisation. Grade: P/NP.

Prerequisite: MUSI 2573.

MUSIC 2583 - Bass III (3)

Intermediate study of the technique of tha bass. Emphasis on improvisation and the repertoire of the instrument in various styles of popular music. Grade: P/NP.

Prerequisite: MUSI 1582.

MUSIC 2584 - Bass IV (3)

Advanced study of the technique of the bass. Emphasis on advanced improvisation and the extension of the characteristic repertoire. Grade: P/NP.

Prerequisite: MUSI 2583.

MUSIC 2593 - Guitar III (3)

Intermediate study of the technique of the guitar. Emphasis on improvisation and the repertoire of the instrument. Grade: P/NP.

Prerequisite: MUSI 1592.

MUSIC 2594 - Guitar IV (3)

Advanced study of the technique of the guitar. Emphasis on advanced improvisation and expansion of the characteristic repertoire. Grade: P/NP.

Prerequisite: MUSI 2593.

MUSIC 2603 - Drums III (3)

Intermediate study of the technique of the drums. Emphasis on musical reading, accompaniment skills and improvisation in diverse styles of Afro-Caribbean music with 4/4 and 6/8 metrics. Grade: P/NP.

Prerequisite: MUSI 1602.

MUSIC 2604 - Drums IV (3)

Advanced study of the technique of the drums. Emphasis on music reading, accompaniment skills and improvisation in styles with amalgam and Up-Tempo Swing metrics. Grade: P/NP.

Prerequisite: MUSI 2603.

MUSIC 2613 - Percussion III (3)

Intermediate study of the technique of the percussion. Emphasis on reading musical styles that use 3/4, 5/4, and 7/4 time signatures. Introduction to improvisation. Grade: P/NP.

Prerequisite: MUSI 1612.

MUSIC 2614 - Percussion IV (3)

Advanced study of the technique of the percussion. Emphasis on improvisation and reading at first sight with change of beats. Grade: P/NP.

Prerequisite: MUSI 2613.

MUSIC 2623 - Harmony I (3)

Construction and link basic notes. Emphasis in the audition discrimination, harmonic dictate, the analysis of progressions, and the use of notes with popular melodies.

Prerequisite: MUSI 1532, 1564.

MUSIC 2624 - Harmony II (3)

Study of the altered and extended chords. Emphasis on auditory discrimination, harmonic dictation, the analysis of progressions and the use of the chords in the accompaniment of popular melodies.

Prerequisite: MUSI 2623.

MUSIC 2625 - Harmony III (3)

Detailed study of the contemporary techniques of harmonization. Emphasis on non-functional harmony, non-tertiary harmony, modal harmony and the poly-chords. Analysis of works that exhibit the mentioned techniques. Practice of exercises in the different techniques learned.

Prerequisite: MUSI 2624.

MUSIC 2633 - Violin III (3)

Intermediate study of the technique of the violin. Emphasis on interpretation, musical reading and improvisation for the performance of the instrument in pop music and jazz. Grade: P/NP.

Prerequisite: MUSI 1632.

MUSIC 2634 - Violin IV (3)

Advanced study of the technique of the violin. Emphasis on musical reading, improvisation and the repertoire for performance of the instrument in pop music and jazz. Grade: P/NP.

Prerequisite: MUSI 2633.

MUSIC 2643 - Voice III (3)

Intermediate study of the skills for the vocal performance: agility, flexibility, extension of register, the importance of the dynamics and intonations through extensive literature. Emphasis on the interpretation and memorization of popular songs for the student's register of voice with the application of improvisation techniques. Grade: P/NP.

Prerequisite: MUSI 1642.

MUSIC 2644 - Voice IV (3)

Advanced study of the skills for the vocal performance. Emphasis on more advanced vocal exercises and the interpretations of various styles. Grade: P/NP.

Prerequisite: MUSI 2643.

MUSIC 2653 - Viola III (3)

Intermediate study of the technique of the viola. Emphasis on interpretation, musical reading and improvisation for the performance of the instrument in pop music and jazz. Grade: P/NP.

Prerequisite: MUSI 1652.

MUSIC 2654 - Viola IV (3)

Advanced study of the technique of the viola. Emphasis on

musical reading, improvisation and the repertoire for performance of the instrument in pop music and jazz. Grade: P/NP.

Prerequisite: MUSI 2653.

MUSIC 2673 - Cello III (3)

Intermediate study of the technique of the cello. Emphasis on interpretation, musical reading and improvisation, for the performance of the instrument in pop music and jazz. Grade: P/NP.

Prerequisite: MUSI 1672.

MUSIC 2674 - Cello IV (3)

Advanced study of the technique of the cello. Emphasis on musical reading, improvisation and the repertoire for performance of the instrument in pop music and jazz. Grade: P/NP.

Prerequisite: MUSI 2673.

MUSIC 2703 - Graduation Concert (3)

Preparation of a 25 minutes recital to be presented in its totality before a jury under the guidance of the candidate's professor. Selection of the repertoire, the preparation of the arrangements and the coordination of the rehearsals. These pieces change each academic term. Includes filming the student's performance in audio and video. The course is passed with a minimum grade of B.

Prerequisite: Be a candidate for graduation.

MUSIC 3020 - Music and Research: Archives (3)

Theoretical analysis of research methodologies in historical archives and private collections. Application of highly developed cybernetic search methodologies and the work in virtual archives.

Prerequisite: MUSI 2080.

MUSIC 3030 - Music and Research: Fieldwork (3)

Theoretical analysis of the methodologies of field research. Application of the practices of ethnographic interviews, observation and participation in public activities of ethnographic value.

Prerequisite: MUSI 2080.

MUSIC 3040 - Music and Research: Design and Writing (3)

Design and carrying out of a musical research. Practical application of the methods and procedures of academic

research. Writing of a monographic work that meets the Prerequisites with regard to the formats and current styles in anthropology and music history writings.

Prerequisite: MUSI 3020, 3030.

MUSIC 3505 - Flute V (3)

Deep study of the technique of the flute. Emphasis on contemporary techniques of improvisation in Jazz as well as in Latin American genres. Extension of a standard repertoire of popular music. Evaluation by a jury. Grade: P/NP.

Prerequisite: MUSI 2504.

MUSIC 3506 - Flute VI (3)

Integrated study of performing the flute. Review of all the concepts learned until converting them into professional practice. Preparation for the Graduation Concert Course. Grade: P/NP.

Prerequisite: MUSI 3505.

MUSIC 3515 - Piano V (3)

Deep study of the technique of performing the piano. Emphasis on the application of technical exercises for improvisation and accompaniment in the instrument. Performing piano solos and the repertoire of popular and classical music. Use of transcription and re-harmonization techniques as an auditory training tool. Grade: P/NP.

Prerequisite: MUSI 2514.

MUSIC 3516 - Piano VI (3)

Integrated study of performing the piano. Emphasis on the study of piano repertoire. Application of improvisation and accompaniment skills for various genres, piano solo performance, re-harmonization, and technical studies for the execution of this instrument. Preparation for the Graduation Concert course. Grade: P/NP.

Prerequisite: MUSI 3515.

MUSIC 3525 - Puerto Rican Cuatro V (3)

Deep study of the technique of the Puerto Rican cuatro. Integration of the classic repertoire for solo or duet. Emphasis on the reading of compound rhythms and the study of syncopation. Grade: P/NP.

Prerequisite: MUSI 2524.

MUSIC 3526 - Puerto Rican Cuatro VI (3)

Integrated study of of performing the Puerto Rican cuatro.

Emphasis on native music, Jazz repertoire and popular international music. Preparation for the Graduation Concert course. Grade: P/NP.

Prerequisite: MUSI 3525.

MUSIC 3545 - Saxophone V (3)

Deep study of the technique of the saxophone. Emphasis in the improvisation skills and the classic repertoire of the instrument to promote integral development, from the historical point of view, as well as the stylistic. Grade: P/NP.

Prerequisite: MUSI 2544.

MUSIC 3546 - Saxophone VI (3)

Integrated study of of performing the saxophone and the vanguard improvisation trends. Emphasis on the European and Puerto Rican classic repertoire to promote the holistic musical development. Preparation for the Graduation Concert course. Grade: P/NP.

Prerequisite: MUSI 3545.

MUSIC 3555 - Trumpet V (3)

Deep study of the technique of the trumpet. Emphasis on the improvisation using standards of Jazz in combo format. The course includes studies for the trumpet, only of the classic and popular repertoire, to develop the high registry. Grade: P/NP.

Prerequisite: MUSI 2554.

MUSIC 3556 - Trumpet VI (3)

Integrated study of performing the trumpet. Emphasis on the expansion of the registry and the development of the art of improvisation in different contexts especially in Jazz and afro-Caribbean music. Preparation for the Graduation Concert course. Grade: P/NP.

Prerequisite: MUSI 3555.

MUSIC 3575 - Trombone V (3)

Deep study of the technique of the trombone. Emphasis on the production and projection of sound, reading at first sight, the extension of the registry, the repertoire and improvisation. Grade: P/NP.

Prerequisite: MUSI 2574.

MUSIC 3576 - Trombone VI (3)

Integrated study of performing the trombone. Emphasis on the Jazz scales and patterns and the variants of the modes.

Preparation for the Graduation Concert course. Grade: P/NP.

Prerequisite: MUSI 3575.

MUSIC 3585 - Bass V (3)

Deep study of the technique of performing the bass. Emphasis on the repertoire of popular songs of high difficulty in different styles and melodic improvisation. Grade: P/NP.

Prerequisite: MUSI 2584.

MUSIC 3586 - Bass VI (3)

Integrated study of the bass performance. Emphasis on the application of technical exercises for improvisation and accompaniment on bass in musical styles within the genres of jazz and popular music. Preparation for the Graduation Concert course. Grade: P/NP.

Prerequisite: MUSI 3585.

MUSIC 3595 - Guitar V (3)

Deep study of the technique of performing the guitar. Emphasis on the application of technical exercises for improvisation and accompaniment in the instrument in musical styles within the genres of jazz and popular music. Grade: P/NP.

Prerequisite: MUSI 2594.

MUSIC 3596 - Guitar VI (3)

Integrated study of the guitar execution. Emphasis in the application of technical exercises for the improvisation and the instrument use in musical styles within the genres of jazz and popular music. preparation for the course: Graduation Concert. Grading P/NP.

Prerequisite: MUSIC 395.

MUSIC 3605 - Drums V (3)

Deep study of the technique of performing the drums. Emphasis on musical reading, accompaniment skills and improvisation in styles, such as "funk fusion" and contemporary jazz. Grade: P/NP.

Prerequisite: MUSI 2604.

MUSIC 3606 - Drums VI (3)

Integrated study of performing the drums. Emphasis on transcription and analysis of accompaniment patterns and solos. Preparation for the Graduation Concert course. Grade: P/NP.

Prerequisite: MUSI 3605.

MUSIC 3615 - Percussion V (3)

Deep study of the technique of performing the percussion instruments with greater attention to keyboard instruments (mallets). Emphasis on musical reading, accompaniment skills and improvisation in fusion styles. Grade: P/NP.

Prerequisite: MUSI 2614.

MUSIC 3616 - Percussion VI (3)

Integrated study of performing the percussion instruments with greater attention to keyboard instruments (mallets). Emphasis on the musical reading, the accompaniment skills, open solos, and improvisation in classified styles like Be-pop, ECM and Avantgarde. Preparation for the Graduation Concert course. Grade: P/NP. Prerequisite: MUSI 3615.

Prerequisite: MUSI 3615.

MUSIC 3635 - Violin V (3)

Deep study of the technique of performing the violin. Emphasis on improvisation for the performance of the instrument in pop music and jazz. Grade: P/NP.

Prerequisite: MUSI 2634.

MUSIC 3636 - Violin VI (3)

Integrated study of performing the violin. Review of the skills learned. Preparation for the Graduation Concert course. Grade: P/NP.

Prerequisite: MUSI 3635.

MUSIC 3645 - Voice V (3)

Deep study of the knowledge of vocal technique. Emphasis on establishing the student's own concept of his voice and to the interpretation of different styles. Practice focused to the exploration of individual musical creativity and to expand improvisation skills. Grade: P/NP.

Prerequisite: MUSI 2644.

MUSIC 3646 - Voice VI (3)

Integrated study of the personal artistic concept in performance and the use of the knowledge of vocal technique and other resources acquired. Practice focused fundamentally to the interpretation and the expansion of improvisation skills. Grade: P/NP.

Prerequisite: MUSI 3645.

MUSIC 3655 - Viola V (3)

Deep study of the technique of performing the viola. Emphasis on the improvisation of performing the instrument in pop music and jazz. Grade: P/NP.

Prerequisite: MUSI 2654.

MUSIC 3656 - Viola VI (3)

Integrated study of performing the viola. Review of the concepts and the skills learned. Preparation for the Graduation Concert course. Grade: P/NP.

Prerequisite: MUSI 3535.

MUSIC 3675 - Cello V (3)

Deep study of the technique of cello. Emphasis on the advanced techniques of improvisation for performance of the instrument in pop music and jazz. Grade: P/NP.

Prerequisite: MUSI 2674.

MUSIC 3676 - Cello VI (3)

Integrated study of the concepts and skills learned of cello. Preparation for the Graduation Concert course. Grade: P/NP.

Prerequisite: MUSI 3575.

MUSIC 3901 - Composition I (3)

Introduction to the study of traditional techniques of musical composition and orchestration in the field of popular music.

Prerequisite: Have passed all second year musical courses of the major of popular music.

MUSIC 4700 - Seminar (3)

Analysis and discussion of alternatives to the fundamental problems of the discipline that instrumentalists and singers confront when putting into practice the skills and knowledge they have acquired during their years of study.

Prerequisite: Be in level five of instrument or voice and the authorization of the music department's chair.

MUSIC 4724 - Arrangements I (3)

Introductory study of the harmonic function of chords and their relation to scales. Basic notions of instrumentation and orchestration.

Prerequisite: MUSI 2623.

MUSIC 4734 - Recording I (M.I.D.I. Room) (3)

Study of the composition, arrangement and recording of music made for different types of instrumental groups with the use of the computer.

MUSIC 4803 - Graduation Concert (3)

Selection of the repertoire, preparation of the arrangements and coordination of the rehearsals for the presentation of a 45-minute recital before a jury. The organization of the graduation concert will be supervised by a teacher selected by the student. Grade: P/NP.

Prerequisite: Have approved all the major courses and be a candidate for graduation.

MUSIC 501 - Preparatory Flute I (3)

Study and development of basic skills for performance on the instrument: the correct manner to hold the flute, correct posture for playing the instrument, diaphragmatic breathing, sound production and elementary music reading. Grade: P/NP.

Prerequisite: MUSI 0531 or placement by audition or by validation.

MUSIC 502 - Preparatory Flute II (3)

Mastery of the basic skills for performing on the instrument in preparation for entrance to the first year of studies with the principal instrument. Grade: P/NP.

Prerequisite: MUSI 0501 or placement by audition or by validation.

MUSIC 511 - Preparatory Piano I (3)

Study and practical development of basic skills. Repertoire and technical studies for the execution of the instrument. Grade: P/NP.

Prerequisite: MUSI 0531 or placement by audition or by validation.

MUSIC 512 - Preparatory Piano II (3)

Mastery of the basic skills for performing on the piano in preparation for entrance to the first year of studies with the principal instrument. Grade: P/NP.

Prerequisite: MUSI 0511 or placement by audition or by validation.

MUSIC 521 - Preparatory Puerto Rican Cuatro I (3)

Study and develompent of the basic technique for the instrument. Development of the musical reading and the

simple repertoire for the cuatro. Grade: P/NP.

Prerequisite: MUSI 0531 or placement by audition or by validation.

MUSIC 522 - Preparatory Puerto Rican Cuatro II (3)

Mastery of the basic skills for the execution of the Puerto Rican cuatro in preparation for the student's admission to the first year of studies in its main instrument. Grade: P/NP.

Prerequisite: MUSI 0521 or placement by audition or by validation.

MUSIC 531 - Theory and Sight Singing I (3)

Introduction to the fundamentals of theory and sight singing for students with little or no experience. Emphasis on the practice of rhythms and the development of auditory perception. Grade: P/NP.

MUSIC 532 - Theory and Sight Singing II (3)

Continuation of learning the fundamentals of theory and sight singing . Grade: P/NP.

Prerequisite: MUSI 0531 or placement by audition or by validation.

MUSIC 541 - Preparatory Saxophone I (3)

Study and development of basic skills for the performance of the saxophone. Grade: P/NP.

Prerequisite: MUSI 0531 or placement by audition or by validation.

MUSIC 542 - Preparatory Saxophone II (3)

Mastery of the basic skills for the performance of the saxophone in preparation for entrance to the first year of studies with the principal instrument. Grade: P/NP.

Prerequisite: MUSI 0541 or placement by audition or by validation.

MUSIC 551 - Preparatory Trumpet I (3)

Study and development of basic skills for the performance of the trumpet. Grade P/NP.

Prerequisite: MUSI 0531 or placement by audition or by validation.

MUSIC 552 - Preparatory Trumpet II (3)

Mastery of the basic skills for the performance of the trumpet in preparation for entrance to the first year of

studies with the principal instrument. Grade P/NP.

Prerequisite: MUSI 0551 or placement by audition or by validation.

MUSIC 571 - Preparatory Trombone I (3)

Study and development of basic skills for the performance of the trombone. Grade P/NP.

Prerequisite: MUSI 0531 or placement by audition or by validation.

MUSIC 572 - Preparatory Trombone II (3)

Mastery of the basic skills forthe performance of the trombone in preparation for entrance to the first year of studies with the principal instrument. Grade P/NP.

Prerequisite: MUSI 0571 or placement by audition or by validation.

MUSIC 581 - Preparatory Bass I (3)

Study and development of basic skills for the performance of the bass. Grade P/NP.

Prerequisite: MUSI 0531 or placement by audition or by validation.

MUSIC 582 - Preparatory Bass II (3)

Mastery of the basic skills for the performance of the bass in preparation for entrance to the first year of studies ith the principal instrument. Grade P/NP.

Prerequisite: MUSI 0581 or placement by audition or by validation.

MUSIC 591 - Preparatory Guitar I (3)

Study and development of basic skills for the performance of the contemporary acoustic or electric guitar.Grade P/NP.

Prerequisite: MUSI 0531 or placement by audition or by validation.

MUSIC 592 - Preparatory Guitar II (3)

Mastery of the basic skills for the performance of the contemporary acoustic or electric guitar in preparation for entrance to the first year of studies with the principal instrument. Grade P/NP.

Prerequisite: MUSI 0591 or placement by audition or by validation.

MUSIC 601 - Preparatory Drums I (3)

Study and development of basic skills for the performance

of the drums. Grade P/NP.

Prerequisite: MUSI 0531 or placement by audition or by validation.

MUSIC 602 - Preparatory Drums II (3)

Mastery of the basic skills for the performance of the drums in preparation for entrance to the first year of studies with the musical instrument. Grade P/NP.

Prerequisite: MUSI 0601 or placement by audition or by validation.

MUSIC 611 - Preparatory Percussion I (3)

Study and conceptual and practical development of basic skills for the performance of the Latin percussion. Grade P/NP.

Prerequisite: MUSI 0531 or placement by audition or by validation.

MUSIC 612 - Preparatory Percussion II (3)

Mastery of the basic skills for the performance of the percussion in preparation for entrance to the first year of studies with the principal musical instrument. Grade P/NP.

Prerequisite: MUSI 0611 or placement by audition or by validation.

MUSIC 631 - Preparatory Violin I (3)

Study and development of the basic skills for the performance of the violin. This course is for students who have little or no previous experience with the instrument. Grade P/NP.

Prerequisite: MUSI 0531 or placement by audition or by validation.

MUSIC 632 - Preparatory Violin II (3)

Mastery of the basic skills for the performance of the violin in preparation for entrance to the first year of studies with the musical instrument. Grade P/NP.

Prerequisite: MUSI 0631 or placement by audition or by validation.

MUSIC 641 - Preparatory Voice I (3)

Study of basic skills for performance with the voice. Grade P/NP.

Prerequisite: MUSI 0531 or placement by audition or by validation.

MUSIC 642 - Preparatory Voice II (3)

Mastery of the basic skills in vocal performance in preparation for entrance to the first year of studies with the principal instrument. Grade P/NP.

Prerequisite: MUSI 0641 or placement by audition or by validation.

MUSIC 651 - Preparatory Viola I (3)

Study and development of the basic skills for the performance of the viola. This course is for students who have little or no previous experience with the instrument. Grade P/NP.

Prerequisite: MUSI 0531 or placement by audition or by validation.

MUSIC 652 - Preparatory Viola II (3)

Mastery of the basic skills for the performance of the viola in preparation for entrance to the first year of studies with the musical instrument. Grade P/NP.

Prerequisite: MUSI 0651 or placement by audition or by validation.

MUSIC 671 - Preparatory Cello I (3)

Study and development of the basic skills for the performance of the cello. This course is for students who have little or no previous experience with the instrument. Grade P/NP.

Prerequisite: MUSI 0531 or placement by audition or by validation.

MUSIC 672 - Preparatory Cello II (3)

Mastery of the basic skills for the performance of the cello in preparation for entrance to the first year of studies with the musical instrument. Grade P/NP.

Prerequisite: MUSI 0671 or placement by audition or by validation.

NANO - Nanotechnology

NANO 3000 - Chemistry of Nanomaterials (3)

Distinction of chemical and physical principles for obtaining and developing nanomaterials. Emphasis on chemical methodologies and characterization techniques. Analysis of the functional characteristics of the materials for their technological application.

Prerequisite: CHEM 2222.

NANO 3100 - Nanomedicine (3)

Discussion of the basic principles of design, synthesis and characterization of nanomaterials for biomedical applications. Analysis of the factors that affect the interaction between biological systems and nanoparticles, biological barriers and recent advances on the design of nanoparticles in the context of biomedical applications.

Prerequisite: NANO 3000.

NANO 3110 - Nanotoxicology (3)

Identification of toxicological risks in health and the environment. Analysis of the impact of nanomaterials through the design and conduct of experiments. Evaluation of the toxicological effect on the plant and animal systems. It requires 30 hours of conference and 30 hours of laboratory.

Prerequisite: NANO 3000.

NANO 3120 - Research Methods in Nanotechnology (3)

Discussion of research methods in nanotechnology. Differentiation in the techniques for the synthesis and characterization of nanoparticles. Integration of ethical and legal principles that govern scientific research.

Prerequisite: NANO 3000 and 3100.

NASC - Natural Science

NTEL - Networks and Telecommunications

NTEL 1200 - Introduction to Networks and Telecommunications (3)

Basic concepts of the configuration of local and regional telecommunications networks will be studied. Aspects such as the standards, ISO-OSI model, protocols, Ethernet technology, the Internet and basic communications equipment will be discussed. Emphasis on application programs, servers, administrators and security controllers, among others. Requires 45 hours of lecture-lab and additional time in an open laboratory.

Prerequisite: ITEC 1100.

NTEL 2101 - Network Protocols (3)

The concepts of protocol communication used in the networks will be established. Ways of installing, administering and correcting information system errors that have network communication protocols incorporated

will be presented. Emphasis on the configuration of servers. Also the E-mail communication protocols will also be discussed. Requires 45 hours of lecture-lab and additional time in an open laboratory.

Prerequisite: NTEL 1200.

NTEL 2150 - Design of Telecommunications Distribution (3)

Discussion of design foundations of the distribution of structured wiring of data networks and telecommunications systems. Includes standards, regulations, the analysis of work areas, horizontal distribution, the backbone, telecommunications rooms, grounding and bonding, and electricity protection. Emphasis on the discussion of techniques to stop fires, tests, project administration, wiring in residences and radio networks. Requires forty-five (45) hours of lecture/lab, and additional time in an Open Laboratory.

Prerequisite: NTEL 1200.

NTEL 2300 - Linux Networks (3)

General discussion of the Linux operating system. Includes the planning, installation, and administration of Linux. Management of utilities, the NFS file system, the information services of NIS network, the graphical interface of the user, networks configuration, the Open SSH, FTP, HTTPD and SMTP protocols, among others. Integration with other operating systems and Web services configuration. Requires forty-five (45) hours of lecture/lab and additional time in an Open Laboratory.

Prerequisite: NTEL 2101.

NTEL 3110 - Installation and Administration of Network Systems (3)

Servers of different platforms, their functions in local area networks (LAN), wide area networks (WAN) and their benefit in a client/server environment. Emphasis on the installation of network systems. The configuration and management of local networks will be discussed. Types of equipment, programs, topologies, security, licenses, protocols, client access and user accounts, and other topics will be discussed. The directory systems of the different platforms of network operating systems will be discussed. Requires 45 hours in a closed laboratory.

Prerequisite: NTEL 2101, COMP 2120.

NTEL 3230 - Introduction to Java Programming (3)

Emphasis on the development of applications created with the Java language will occur. Implementation of different

versions of Java, integration of Web pages, databases and others. The relationship with C + + language and the new applications of this language will be discussed. The components Java for clients, servers and Internet applications will be discussed. Requires 45 hours of closed lecture-lab.

Prerequisite: NTEL 2101, COMP 2120.

NTEL 3310 - E-Mail Server (3)

Emphasis on the installation and administration of an E-mail server. Discussion of topics on protocols, configuration of mailboxes, distribution lists, public directories, address books directory replies, message transfers, transport collaboration and services. Includes activities in backup, security remote management and sent and received messages. Requires 45 hours of closed lecture-lab.

Prerequisite: NTEL 3110.

NTEL 3401 - Minicomputers Operations (3)

Basic concepts and the introduction to the operation of minicomputers systems will be studied. Includes topics on systems architecture, security, user interface, job management, message handling, printing functions, device configuration, backup, recovery, subsystems, database access, access to clients and determination of basic problems. Requires 45 hours of closed lecture-lab.

Prerequisite: NTEL 2101.

NTEL 3520 - Internet Programming and Administration (3)

The concepts necessary to install, form and administer an Internet server based on protocol HTTP will be studied. Emphasis on the FTP Server as repository for archives and programs. Emphasis on tools for the edition and publication of Web Pages. Internet programming languages and graphs and images design will be discussed. The browsers to be used will be established. Requires 45 hours of closed lecture-lab.

Prerequisite: NTEL 3110.

NTEL 3600 - SQL Database Server (3)

The basic concepts of the SQL database platform, its architecture, and components will be studied. Aspects, such as the creation of databases, SQL transactions, data integrity, indices, queries and handling of transactions will be discussed. This tool will be focused on the administration and implementation of a SQL server with application to the Web. Requires 45 hours of closed

lecture-lab.

Prerequisite: NTEL 311.

NTEL 3770 - Wireless Networks (3)

Discussion of the foundations and techniques for the development of wireless data networks. Emphasis on the IEEE 802.11 B, A and G standards. Analysis of access control to media, security, administration, planning and the development of a radio network. Practice in the installation of antennas, cables, programs and configuration of applications.

Prerequisite: NTEL 3110.

NTEL 3971 - Special Topics in Telecommunications (3)

Discussion of current special topics in the field of data networks and telecommunications. Projects of investigation, analysis of cases, critique of articles and visits to computer centers with network infrastructure will be assigned.

Prerequisite: NTEL 3750 and authorization of the department's chair and the Dean of Academic Affairs.

NTEL 4150 - Security in Networks (3)

Analysis of the concepts and techniques for security in data networks. Includes the development and placement of security systems, human resources and the policies of physical safety. Emphasis on models of architecture, threats, attacks, radio networks, viruses, response to incidents, backups and recovery from disasters, risk management, and governmental laws. Exploration of solutions such as digital certificates, security tokens, biometry, cryptography, education and audit, among others. Requires forty-five (45) hours of lecture/lab and additional time in an Open Laboratory.

Prerequisite: NTEL 3770.

NTEL 4500 - Audit and Controls in Network Systems (3)

Discussion of the concepts and principles of auditing in networks systems. Example of risks and controls of projects' life cycle. Includes legal and ethical aspects related to privacy. Analysis of the importance of the process of auditing systems in the field of the information technology.

NTEL 4520 - Voice and Video Networks (3)

Analysis of concepts and techniques for the development of voice networks based on IP (VOIP) protocol and

solutions for video communication through networks. Emphasis on the study of the initiation of session (SIP) protocol, networks telephony, voice and video electronic mail, the videoconference and implementation of quality service (QOS). Includes the commutation of multiple protocol labels (MPLS), and the transport real time protocol (RTP). Practice in the development of networks for video communication and virtual meetings. Requires forty-five (45) hours of lecture/lab and additional time in an Open Laboratory.

Prerequisite: NTEL 3110.

NTEL 4610 - Storage Networks (3)

Design of storage area networks (SAN). Discussion of planning, development and administration of storage solutions in a data network. Emphasis on the development of technologies such as the optical Fiber Channel architecture, arbitrary repetition technology, factory switch technology, storage security, backup and recovery from disasters. Requires forty-five (45) hours of lecture/lab and additional time in an Open Laboratory.

Prerequisite: NTEL 3110.

NTEL 4750 - Network Management (3)

Analysis of data network management. Discussion of the processes and activities for managing network systems from a managerial perspective. Development of techniques and use of programs for network management, detection of problems, monitoring of traffic in the network, the operator console, reports, statistics, the update of applications and network security. Investigation of SNMP and RMON protocols and use of different solutions for network management. Requires forty-five (45) hours of lecture/lab and additional time in an Open Laboratory.

Prerequisite: NTEL 4610.

NTEL 4910 - Practicum in Telecommunications (3)

Supervised work experience in the field of telecommunications or local data networks under the supervision of a faculty member and a practice center supervisor. Require 10 hours of lecture and 180 hours of practice during the semester.

Prerequisite: Have approved all NTEL courses of levels 1000, 2000 and 3000 up to 4610. .

NURS - Nursing

NURS 1111 - Fundamentals of Nursing (4)

Introduction to the nursing profession and its historical evolution. Emphasis on the principles of the conceptual frame and the concepts of the Program. Includes the ethical, legal and moral aspects based on the practice standards. Discussion of the nursing process for adult care with common interferences in the functional health patterns that support physical processes. Integration of the principles and basic concepts of growth and development psycho- physiological aspects, considering cultural diversity within a safe environment.

Corequisite: NURS 1112, 1130.

NURS 1112 - Practice of Fundamentals of Nursing (2)

Application of the nursing process in the care of adults with common dysfunctions in the functional health patterns that support physical functioning. Beginning of the development of clinical skills to perform in the areas of competence as care providers. Requires a total of 90 hours of laboratory in diverse scenarios.

Corequisite: NURS 1111.

NURS 1130 - Pharmacological Aspects (3)

Discussion of relevant aspects of the study of the pharmacology including the biochemical, physiological, research and legal aspects. Use of the principles and skills of posolgy. Application of the nursing process in medication administration. Requires 45 hours of lecture and 30 hours of open presential or virtual lab.

Corequisite: NURS 1111.

NURS 1231 - Fundamentals of Adult Care I (6)

Discussion of the acute and chronic dysfunctions of health related to functional health patterns: perception and health management, nutritional-metabolic and elimination. Includes anatomical, physiopathological, microbiological, biochemical and environmental concepts that affect human functioning. Integration of communication, administration, care management, research and the nursing process skills for client care.

Prerequisite: NURS 1111, 1112, 1130. Corequisite: NURS 1232.

NURS 1232 - Practice of Adult Care I (2)

Application of the nursing process in the care of adults with acute and chronic health dysfunctions integrating the

skills of communication, care management and research. Emphasis on management of dysfunctions in the functional patterns of health: perception- management, nutritional-metabolic and elimination. Requires a total of 90 hours of clinical practice in diverse scenarios.

Prerequisite: NURS 1111, 1112, 1130. Corequisite: NURS 1231.

NURS 2141 - Fundamentals of Maternal-Neonatal Care (3)

Description of the evolution of maternal-neonatal nursing integrating the principles of the conceptual framework. Discussion of anatomical, biochemical, physiopsycological and pathological changes that affect the integral functioning of the client, before, during and after childbirth, including the normal new born during the early neonatal stage. Use of the nursing process in the study of the appropriate changes in the stages and health dysfunctions.

Prerequisite: NURS 1231. Corequisite: NURS 2142, 2233.

NURS 2142 - Practice in Maternal-Neonatal Care (2)

Application of the nursing process using the functional patterns of health in the care of clients during pregnancy, childbirth and pos childbirth. The care of the normal new born is included during the early neonatal stage. Requires a total of 60 hours of clinical practice in diverse scenarios.

Prerequisite: NURS 1231, 1232. Corequisite: NURS 2141, 2233, 2234.

NURS 2233 - Fundamentals of Adult Care II (6)

Discussion of the acute and chronic health dysfunctions related to the functional health patterns: activity-exercise, cognitive-perceptual and sexual reproduction. Includes anatomical, physiopathological, microbiological, biochemical and environmental concepts that affect the adult human functioning. Integration of communication, care management, research, and the nursing process skills and the nursing process in client's care.

Prerequisite: NURS 1231. Corequisite: NURS 2141, 214.

NURS 2234 - Practice of Adult Care II (2)

Application of the nursing process in the care of adults with acute and chronic health dysfunctions integrating communication, care management, and research concepts. Emphasis on the management of dysfunctions related to functional health patterns: activity-exercise, cognitive-perceptual and sexuality-reproduction. Requires a total of 90 hours of clinical practice in diverse scenarios.

Prerequisite: NURS 1231, 1232. Corequisite: NURS 2142, 2233.

NURS 2351 - Fundamentals of Pediatric Care (3)

Discussion of the essential aspects in client care from the late normal neonatal stages to adolescence. Analysis of the dysfunctions in the functional patterns of health by using the nursing process. Use of the physiopathological and environmental concepts and the conceptual framework of curriculum.

Prerequisite: NURS 2141, 2142, 2233. Corequisite: NURS 2352, 2361, 2362, 2970.

NURS 2352 - Practicing Pediatric Care (2)

Application of the nursing process in client care from the normal neonatal stages to adolescence. Emphasis on the management of dysfunctions affecting the functional health patterns using the concepts of curriculum as a framework. Requires 60 hours of clinical practice in diverse scenarios.

Prerequisite: NURS 2234. Corequisite: NURS 2351, 2361, 2362, 2970.

NURS 2361 - Fundamentals of Psychosocial Care (3)

Discussion of theoretical models, principles and concepts of psychosocial nursing. Description of psychosocial dysfunctions of the adult using the nursing process as a framework. Includes neuroanatomy, neuropsysiology, ethical-legal, research and communication concepts.

Prerequisite: NURS 2233, 2141. Corequisite: NURS 2351, 2362 and 2970.

NURS 2362 - Practice of Psychosocial Care (2)

Application of the nursing process, theoretical models, principles and concepts in psychosocial care of the adult. Practice of the skills of therapeutic communication in interventions. Requires a total of 60 hours of clinical practice in diverse scenarios.

Prerequisite: NURS 2142, 2234. Corequisite: NURS 2352, 2361, 2970.

NURS 2970 - Transition Seminar (1)

Discussion of essential aspects of student transition to the labor environment. Analysis of the trends and controversies that impact health care. Review of the ethical-legal, technological and scientific implications, professional values and social and economic influences in the exercise of the profession. Development of strategies

for taking the board examination.

Prerequisite: NURS 2233, 2141. Corequisite: NURS 2351, 2352, 2361, 2362.

NURS 3000 - Principles of Robotic Nursing (3)

Study of the general principles of nursing related to the surgical procedures assisted by robotic technology. The basic concepts of surgery assisted by robot are included. Application of the roles of nursing professionals in the process of assisting the doctor in different robotic surgeries.

NURS 3100 - Dimensions of Professional Practice (3)

Analysis of the competence areas: care provider and coordinator, and member of the discipline from the professional dimension. Includes the concepts: humanistic care, ethical-legal responsibility and the nursing process. Emphasis on health education, leadership and management that facilitate dealing with changes in the health care systems and the nursing practice.

Corequisite: NURS 3120 and 3115, or have an Associate Degree in Nursing. .

NURS 3115 - Introduction to The Nursing Research Process (3)

Discussion of the research process and the ethical legal considerations. Application and evaluation of the practice based on the evidence for health problem solving. Research assessment for the development of the best practices in the profession.

Corequisite: NURS 3100, 3120.

NURS 3120 - Health Assessment (4)

Application of knowledge and skills for a comprehensive health assessment of the client throughout the life cycle. Emphasis on the compilation and organization of data by means of the physical examination and diagnostic reasoning. Requires 30 hours of lecture and 60 hours of closed presential lab.

Corequisite: NURS 3100, 3115.

NURS 3135 - Nutrition and Dietetics Principles in Nursing (3)

Study of the general principles of nursing related to nutrition and dietetics. Emphasis on disease prevention, management and rehabilitation of conditions throughout the life cycle. Integrated application of the principles and concepts of nutrition based on scientific evidence.

NURS 3140 - Intervention in Psychosocial Transitions (2)

Analysis of the trends, theories and concepts that influence the practice of the psychosocial nursing professional. Review of professional nursing interventions that apply to the psychosocial care of individuals, families, groups and vulnerable populations or with persons with dysfunctions in functional health patterns. Integration of communication, ethical-legal, moral spiritual principles and research findings. Corequisites: NURS 3190, 4911.

Corequisite: NURS 3190, 4911.

NURS 3145 - Professional Interventions in Cardiovascular Diseases (3)

Application of the nursing process in the three levels of prevention aimed at adult patients with heart rhythm conditions and conduction alterations. Interpretation and identification of the different dysrhythmias and their pharmacotherapy. Application of findings based on scientific evidence. Integrated discussion of the ethical-legal, humanistic principles and concepts of the nursing profession that should be taken into consideration with this population. Prerequisite: NURS 2233

Prerequisite: NURS 2233.

NURS 3180 - Nursing Process with the High Risk Newborn (3)

Study of the conditions presented by the high risk neonatal. Discussion of ethical, legal, and moral aspects, humanistic principles and those of the nursing profession that should be taken into consideration when intervening with this population. The student will be exposed to reading, interpreting, and identifying the dysrhythmias that the child can present in a Neonatal Intensive Care Unit (NICU). Emphasis on nursing interventions in the different diagnosis, treatment, dosage, ventilation, mechanical and cardiovascular resuscitation tests.

NURS 3190 - Professional Intervention During the Life Cycle (4)

Analysis of the nursing process as a tool of the professional with emphasis on therapeutic and diagnostic reasoning for decision-making in professional interventions. Review of interventions at the prevention levels when managing human responses in the mostPrerequisites: NURS 3100, 3115, 3120. Corequisites: NURS 3140, 4911.

Prerequisite: NURS 3100, 3115, 312. Corequisite: NURS 3140, 4911.

NURS 3250 - Electronic Documentation (3)

Administration of electronic patient files that demonstrate their health condition. For this, the nursing process will be used. Emphasis on the legal aspects for the protection and security of the health registries.

NURS 4180 - Nursing Care of Family and Community (4)

Analysis of selected theories and concepts that facilitate the study of the family as an integral part of the client community. Includes the review of the principles and concepts of epidemiology, biostatistics and demography of public health. Discussion of the nursing process for family and community care with emphasis on the promotion of health and well-being. Ethical-legal, humanist and research concepts. Study of the nursing professional's roles in a culturally diverse community.

Prerequisite: NURS 3140, 3190. Corequisite: NURS 4914.

NURS 4190 - Physiopathology in Altered Functional Patterns (3)

In-depth study of the physiopathological processes that cause or are related to selected alterations in functional health patterns throughout the life cycle and their interrelation. In-depth study of factors contributing to functional alterations, including pathogenic effects produced in an individual's interaction with the environment.

NURS 4230 - Diverse Topics (3)

Basic knowledge of organization, integration and reinforcements of content related to care for the following clients: adults, infants, children and adolescents, pregnant women, family and community. Emphasis on mental health clients.

NURS 4240 - Administration and Supervision of Nursing Services (3)

Interpretation of concepts related with management communication between the administrators, supervisors, and collaborators. An integration of the administration, leadership, and total quality concepts in clinical situations. Emphasis on the role of the nursing administrator during the organization of services, decision-making, and assignment of personnel.

NURS 4911 - Practice in Professional Interventions During the Life Cycle (3)

Application of the nursing process with emphasis on therapeutic and diagnosis reasoning for decision making in professional interventions. Emphasis on the levels of prevention for the management of human responses in the most common chronic dysfunctions. Integrated application of the principles and concepts of communication, health education, ethical-legal, research, leadership and management. Requires a total of 45 hours of clinical practice with the pediatric client and 45 hours with the adult client in diverse scenarios.

Prerequisite: NURS 3100, 3115, 312. Corequisite: NURS 3140 and 3190.

NURS 4914 - Practice in Nursing Care to the Family and Community (4)

Application of the nursing process in the humanist care of family and groups as integrated part of the community as client. Integration of concepts and theories that serve as base of the nursing practice with the family and community. Use of public health concepts, epidemiology, biostatistics, demography and community nursing in the intervention with family and community. Demonstration of planning, coordination, leadership and educational skills in the implementation of intervention strategies. Application of ethical-legal principles and research findings in undertaking the roles of the nursing profession in promoting health and well-being. Requires 120 hours of clinical practice in diverse scenarios.

Prerequisite: NURS 4911. Corequisite: NURS 4180.

NURS 4980 - Integrated Workshop (4)

Integration of knowledge, skills and attitudes in the selection of professional intervention strategies for the processes of problem solving and decision making practice in simulated situations in different scenarios. Use of the scenario categories for effective and safe care, maintenance and promotion of health, and of psychosocial and physiological integration as a frame of reference in intervention with clients. Requires 30 hours of seminar and 90 hours of clinical practice in diverse scenarios. Prerequisite: NURS 4914, in case the student is a candidate for graduation in the current academic term, this course may be offered concurrrently with NURS 4180 and 4914.

Prerequisite: NURS 4914. Corequisite: In case the student is a candidate for graduation in the current academic term, this course may be offered concurrrently with NURS 4180 and 4914. .

OCTH - Occupational Therapy

OCTH 1000 - Introduction to Occupational Therapy (3)

Study of the philosophical history and standards of the profession with emphasis on its current functions. Description of the needs in the occupational areas and the factors that contribute to health. Discussion of the ethical-legal elements and the terminology related to the profession.

OCTH 1031 - Therapeutic Modalities I (3)

Study of the basic concepts of analysis of the activities, of the learning process and of teaching the therapeutic modalities, in addition to their benefits. Development of activities to maximize independence and occupation at any stage of the human being. Application and creative use of crafts, games and dynamics, among others that are used in the clinical setting. It includes principles of safety and maintenance in the work areas. Knowledge and development of administrative skills such as inventory and requisition. It requires 30 hours of conference and 30 hours of laboratory.

OCTH 1050 - Human Development in The Occupations Throughout the Life Cycle (3)

Discussion of developmental theories and the components of occupational performance throughout the life cycle. Emphasis on the functions and tasks expected in each stage of growth and development and the impact of a genetic defect or an acquired dysfunction during life. Integration of the principles of developmental psychology.

OCTH 1060 - Anatomy and Human Physiology (3)

Study of the human body as a structural and functional unit. Emphasis on the anatomy of the muscular-skeletal and the central nervous system. Analysis of the pathophysiological processes associated with the nervous system, the upper and lower extremities and the trunk, and their impact on significant human activities. Requires 30 hours of lecture and 30 hours of lab.

OCTH 1111 - Physical Dysfunction I (3)

Identification of the clinical conditions commonly referred for occupational therapy: their administration, precautions and interventions. Discussion of the reference marks normally most used in scenarios of physical dysfunction. Requires 30 hours of lecture and 30 of lab.

Prerequisite: OCTH 1000, 1050 y 1060.

OCTH 1120 - Processes in Occupational Therapy (2)

Discussion of the processes of adaptation to the environment of individuals with special needs. Evaluation of the importance of the promotion and restoration ofphysical and mental health. Use of strategies for developing interview and practice skills with evaluation and documentation formats. Development of observation and documentation skills. Familiarization with the evaluation and documentation formats. Knowledge of the role of the assistant versus that of the therapist according to the laws and regulations applicable to Puerto Rico.

OCTH 1121 - Occupational Therapy Applied to Pediatrics I (3)

Discussion of the acquired or congenital pediatric conditions that require occupational therapy. Observation of the individual to detect the acquisition of the performance skills during the different stages of development. Survey of service scenarios. Requires 30 hours of lecture and 30 of lab.

Prerequisite: OCTH 1000, 1050, 1060.

OCTH 1132 - Therapeutic Modalities II (3)

Development of clinical skills according to the condition and stage of development of the client. Analysis of activities and intervention techniques in the sensorimotor, psychosocial, cognitive, and daily living activities. It includes the planning and implementation of activities, such as crafts, psychoeducational talks, games and dynamics, among others, as part of the intervention plan. Cost analysis, safety measures and protection in the work environment. Emphasis on the role of the occupational therapy assistant in the design and implementation of the intervention plan. Requires 30 hours of conference and 30 of laboratory.

Prerequisite: OCTH 1000, 1031 y 1120.

OCTH 1141 - Occupational Therapy Applied to Psycho-Social Dysfunction I (3)

Identification of the principles of mental health and those mental disorders that alter the functional role of individuals commonly referred for occupational therapy, and the different intervention strategies. Recognition of the reference marks normally used. Knowledge and development of interview techniques and strategies.

Prerequisite: OCTH 1000, 1031.

OCTH 2022 - Occupational Therapy Applied to Pediatrics II (3)

Development of procedures and treatments applied to the pediatric client. Study of developmental motor skills, perceptions and principles of self care. Analysis of the appropriate activities in harmony with the growth level and development. Continuous application of occupational therapy services.

OCTH 2042 - Occupational Therapy Applied to Psycho-Social Dysfunction II (3)

Analysis of the principles of mental health and those disorders that alter the functional role of individuals. Handling the conditions, precautions and selection of activities of psycho-social intervention. Development of interview techniques and intervention strategies in psycho-social conditions. Development of documentation skills and exposure to evaluation formats. Knowledge of psychoactive drugs associated with mental disorders.

Prerequisite: OCTH 1141.

OCTH 2102 - Physical Dysfunction II (3)

Survey of the pathological processes, treatment and the principles of rehabilitation in the individual, as well as special considerations in the geriatric population. Application of physical modalities as a preparatory method for an intervention. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: OCTH 1111.

OCTH 2135 - Occupational Therapy in Daily Activities (3)

Evaluation of intervention techniques in daily life activities (ADL) and in the instrumental activities of daily life (AIDL). Emphasis on technological assistance, the clothing techniques, food preparation, energy conservation techniques, the protection of joints, the simplification of tasks and ergonomics. Study of laws related to people with disabilities. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: OCTH 1111, 1121.

OCTH 2923 - Clinical Practice I (3)

Development of basic competencies through supervised clinical experience. Emphasis on direct participation with the client in the assigned scenario. Application of screenings, clinical assessment and administrative processes related to the profession. Requires 180 hours of practice.

Prerequisite: OCTH 1111, 1121, 1132 y 1141.

OCTH 2924 - Clinical Practice II (5)

Development of intervention competencies of an occupational therapy assistant at the entry level. Clinical practice supervised by an appropriately qualified specialist in the assigned scenario. Requires 270 hours of practice.

Prerequisite: OCTH 2022, 2042, 2102, 2135 and 2923. Corequisite: OCTH 2975.

OCTH 2975 - Integration Seminar (3)

Critical analysis of situations and current trends in rehabilitation services. Discussion of cases and application of problem solving processes related to dealing with clients in occupational therapy. Prerequisite: have passed all major courses.

Prerequisite: OCTH 1120, 2102, 2135 y 2921. Corequisite: OCTH 2922.

OMSY - Office Systems Administration

OMSY 1000 - Keyboarding Skills (3)

Development of basic keyboard skills on a microcomputer. Emphasis on the correct use of alpha, numeric, symbols, and function keyboards. Techniques to achieve speed, accuracy, and proofreading. Productions of documents such as letters, memos, and simple reports.

OMSY 1010 - Speed Writing in Spanish (3)

Development of reading, writing and dictation taking skills using an alphabetical system of abbreviated writing. Includes the fundamental principles of the theory of a system of alphabetical writing in Spanish designed for fast writing and reading. Emphasis on transcription skills and taking dictation at optimal levels, vocabulary development, accuracy, checking, spelling and other grammatical aspects.

Prerequisite: GESP 1101.

OMSY 1015 - Speed Writing in English (3)

Development of reading, writing, and taking dictation skills using the alphabetic system of abbreviated writing. Includes fundamental principles of the theory of a system of abbreviated writing in English, a system designed for fast writing and reading. Emphasis on the development of transcription skills, and of taking dictation at optimal levels, development of vocabulary, accuracy, proofreading,

spelling, and other grammatical aspects.

Prerequisite: GEEN 1102 or 1202 or 2312.

OMSY 1101 - Information Processing I (4)

Development of skills using the computer keyboard. Introduction to the basic functions of the word processing program in use. Development of basic skills for speed and accuracy and their application to the creation of documents. Importance given to the basic techniques of proofreading. Requires 60 hours of lecture-lab.

OMSY 1102 - Information Processing II (4)

Development of basic skills for speed and accuracy. Application of these skills when processing business correspondence in the computer. Development of skills in the production of business documents of frequent use in the office. Requires 60 hours of lecture-lab.

Prerequisite: OMSY 1101.

OMSY 2000 - Production of Business Documents (4)

Complex document production applying advanced functions of the word processing program in use Emphasis on the quality of documents, development of basic skills at optimum levels and proofreading. Requires 60 hours of lecture-lab.

Prerequisite: OMSY 1102.

OMSY 2040 - Electronic Spreadsheets (3)

Application of skills in the management of electronic spreadsheets. Using the program's tools for producing different documents and financial and statistical reports that are part of the duties of the office systems administrator. Evaluation of information for decision-making . Emphasis on the effective application of the electronic spreadsheet within the context of office systems. Requires 45 hours of lecture-lab.

Prerequisite: OMSY 1101 or GEIC 1010.

OMSY 2060 - Administration of Documents and Databases (4)

Discussion of the different systems of receiving, classifying, processing, control, filing, and disposition of documents. Theory and concepts related with manual, mechanical and automated systems of handling and locating documents in their administration. Application of skills in the use of a electronic database program. Requires 60 hours of lecture-lab.

Prerequisite: OMSY 1101.

OMSY 2233 - Information Processing in Offices of Legal Affairs (4)

Discussion of the terminology of a legal nature and of ethical aspects related to the processing of information in of legal affairs offices. Analysis of the procedures for preparing and processing documents used in courts and administrative agencies, among others. Study of legal norms and essential aspects of research in formal law sources. Creation of formats and legal document preparation. Requires 60 hours of lecture-laboratory.

Prerequisite: OMSY 1102.

OMSY 2240 - Information Processing in Offices of Health Services (3)

Discussion of terminology of legal and ethical aspects related to the processing of information in medical service offices. Analysis of the impact of state and federal laws that regulate health services in Puerto Rico. Production of documents that are used in health service offices. Requires 45 hours of lecture-lab.

OMSY 2250 - Human Resources in the Organizational Environment (3)

Study of the importance of human resources in the organizational environment. Emphasis on the aspects of personality and professional conduct to perform effectively in the office environment. Analysis of the techniques of team work, interpersonal relations, ethics in the office, communication channels, motivation, employment satisfaction, performance, professional development and organizational culture.

OMSY 2400 - Medical Terminology (3)

Study of the medical vocabulary by means of the identification of prefixes, suffixes and combination of words to understand the different systems that make up the structure of the human body and its respective functions and diseases.

OMSY 2500 - Legal and Ethical Aspects in Medical Information (3)

Analysis of the state and federal laws and regulations that apply to medical information and to the administration of medical records. Application of the ethical and legal principles in decision making and in the solution of situations related to health care.

OMSY 3000 - Health Services Billing (3)

Study of the terminology for the invoicing of health services. Application of the fundamental concepts of

manual and electronic invoicing. Requires 45 hours of lecture-laboratory.

Prerequisite: OMSY 2240 or OMSY 2400 and 2500.

OMSY 3030 - Business Communication in Spanish (3)

Development of oral and written communication skills in Spanish. Writing and revision of business documents. Analysis of the basic elements of business communication.

Prerequisite: GESP 1102 and OMSY 1101 or GEIC 1010.

OMSY 3040 - Business Communication in English (3)

Development of oral and written business communication skills in English. Writing and revision of business documents. Application of language rules and simple oral practices.

Prerequisite: GEEN 1101 or equivalent and OMSY 1101 or GEIC 1010.

OMSY 3050 - Graphic Art Design for Offices (3)

Art design using tools available for the computerized preparation of office publications, such as: letterheads, bulletins, announcements, invitations, agendas, programs, brochures, and reviews, among others. Emphasis on creativity and effective use of the resources.

Prerequisite: OMSY 2000.

OMSY 3080 - Office Administration (3)

Discussion of the administrative procedures, the global market in companies, self-owned companies, as well as the impact of technology and its application to office systems. Analysis of the tasks and responsibilities of office professionals and their impact on productivity.

Prerequisite: OMSY 1102.

OMSY 3430 - Electronic Codification of Diagnoses and Procedures (3)

Classification and codification of medical diagnoses and procedures with the use of a computerized program. Application of medical insurance regulations in electronic invoicing. Emphasis on audits of medical claims.

Prerequisite: OMSY 3000.

OMSY 3440 - Administration of The Electronic Medical Record (3)

Development of skills to administer, collect, process, keep and recover medical data of patients by means of the use of a computerized program. Application of the laws of

confidentiality and privacy in the administration of electronic medical records.

OMSY 3500 - Interactive Business Communication in English (3)

Development of oral communication skills and the effective use of enterprise vocabulary. Oral practice in simulations of office situations with the goal of improving pronunciation of the English language and reducing communication barriers. Technological resources will be used to develop and reinforce oral communication skills.

Prerequisite: GEEN 1103 or its equivalent.

OMSY 4010 - Integration of Application Programs in Office Administration (3)

Integration of the functions of word processing, graphic, art design, electronic spreadsheets, databases and calendars in the preparation of different documents in the office.

Prerequisite: OMSY 2000, 2040, 2060, 3050.

OMSY 4500 - Telecommunications in The Office (3)

Study of the theoretical and practical foundations of telecommunications and their application in the enterprise environment. Development of the basic skills necessary for the administration of telecommunications technology. Study of the ethical principles and security in the administration of telecommunications. Requires 45 hours of lecture-lab.

Prerequisite: OMSY 2000.

OMSY 4910 - Professional Practicum (3)

Direct experience by means of the performance of tasks, with administrative support, in authorized practice centers. Requires 180 hours of practice.

Prerequisite: Have approved the OMSY courses at the 3000 level. Corequisite: OMSY 4970.

OMSY 4920 - Design and Administration of Training (3)

Development of the skills for giving training within the role of the administrative assistant in diverse organizational scenarios.

OMSY 4970 - Integration Seminar (3)

Integration of the knowledge, skills and required attitudes of all members of a work team in an office system. Emphasis on the transition from student to employee. Critical analysis, evaluation and recommendations in

facing situations that occur in the work environment.

OPMS - Operations Management

OPMS 3000 - Operations Management of Manufacturing and Service (3)

Study of the principles and methods of production and operations management. Examination of the fundamental concepts of operations management in manufacturing and service companies. Application of organizational skills. Examination of the techniques of planning, organization, direction and control of operations processes.

Prerequisite: BADM 1900 y MAEC 2140.

OPMS 3340 - Management Policies and Strategies (3)

Behavioral management analysis and commercial ethics as part of the production process at the national and international levels. Application to small businesses.

Prerequisite: BADM 1900.

OPMS 3500 - Logistics and Supply Chain Management (3)

Analysis of the purchase materials, equipment and services functions as the primary activites in production planning, bargaining and contracting principles. Selection and evaluation of supply sources. Computerized purchasing systems.

Prerequisite: OPMS 3000.

OPMS 3820 - Management Sciences (3)

Application of quantitative methods that are adaptable to production and operations under conditions of certainty, risk and uncertainty to company decision-making. Problem solving using the techniques of linear programming, transportation, allocations, project management, queuing theory, decision analysis and simulation.

Prerequisite: MAEC 2140.

OPMS 4300 - Service Operations Management (3)

Study of the principles and methods of service operations management. Examination of the fundamental concepts of Operations Management in service companies and in manufacturing companies with service operations. Examination of the techniques of planning, organization, direction and control of operations processes. Application of organizational skills in operations management.

Prerequisite: OPMS 3000.

OPMS 4500 - Project Management (3)

Examination of the main aspects of project management. Analysis of the fundamental principles of defining the scope, estimation of time, cost and resources of a project. Use of the elements to determine the scope, activities and critical step of projects. Application of techniques for the development of a work plan, schedule and management of time deviations of a project.

Prerequisite: OPMS 3000.

OPST - Optical Science Technology

OPST 1003 - Fundamentals of Optics (2)

Description of the concepts related to ophthalmic conditions and the lenses that correct these refractive problems. Study of the types of lenses, the frames, the curvature and the interpretation of the prescription. Discussion of the laws that regulate the practice of opticians in Puerto Rico and other jurisdictions, as well as the code of conduct and principles related to human dignity in the optician's profession.

OPST 1010 - Principles of Biology (3)

Discussion of the basic concepts of Biology. Emphasis on the anatomy and the operation of the tegumentary, nervous, endocrine and immunological systems of the human being. Requires 30 hours of lecture and 30 hours of lab.

OPST 1011 - Ophthalmic Materials I (3)

Introduction to the field of ophthalmic optics and the functions of the laboratory technician. Study of the history, the optical terminology, nomenclature, graphs, optical charts and the basic use of equipment. Practice in the standard alignment of frames, until the final production of some lenses of simple vision. Requires 30 hours of lecture and 45 hours of lab.

Prerequisite: OPST 1003.

OPST 1012 - Ophthalmic Materials II (3)

Study of ophthalmic materials with emphasis on the thickness of the lens. Practice in the assembly of lenses, the position and the function of bifocal and multifocal lenses, as well as the appropriate administration of the equipment and its effects. Includes practice and procedures for finishing points. Study of drilling and assembly techniques for lenses in borderless frames and the use of finishing equipment. Requires 30 hours of lecture and 45 hours of lab.

Prerequisite: OPST 1011.

OPST 1020 - Anatomy and Physiology of the Eye (3)

Fundamental study of eye structure and function, vision mechanism, visual field and keenness, subnormal reception and vision. Includes pathophysiological and pharmacological considerations. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: OPST 1010.

OPST 1111 - Fundamentals of Physics I (3)

Description of the general concepts of physical sciences related to the area of optical sciences. Application of the concepts of physics in the practice scenario of optical sciences.

OPST 1112 - Fundamentals of Physics II (3)

Study of the phenomena related to light. Discussion of inherent mathematical principles inherent to the effects of light on the visual system. Emphasis on the physical concepts necessary for the study of optical phenomena.

Prerequisite: OPST 1010, 1011.

OPST 2000 - Legal and Ethical Considerations (2)

Discussion of the code of conduct and principles related to human dignity in the optician profession. Study of the laws and regulations that apply to Puerto Rico and other jurisdictions.

OPST 2004 - Contact Lenses I (2)

Discussion of the history of contact lenses and materials used. Integration of basic concepts of the anatomy and physiology of the cornea, corneal topography and the design of lenses. Description of the use of the keraticmeter and the slit lamp. Discussion of optical principles in the design of contact lenses. Discussion on optical principles and types of contact lenses.

Prerequisite: OPST 1020. Corequisite: OPST 1002,.2010, 2020.

OPST 2005 - Contact Lenses II (3)

Description on the relation between the cornea and the lens. Includes the adjustment of the soft contact lens, and the therapeutic and cosmetic adjustment. Assessment and identification of signs and symptoms of keratoconus. Use of the keraticmeter and the slit lamp. Requires 30 hours of lecture and 30 of lab.

Prerequisite: OPST 2004. Corequisite: OPST 2103, 2911, 2913.

OPST 2010 - Prescription Dispatch (3)

Study of professional ethics and the responsibility in the practice of dispatching prescription. Application of the appropriate techniques for the adjustments of plastic and metal frames. Development of strategies for solving common problems in the practice and the necessary skills at the prescription table. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: OPST 1001.

OPST 2020 - Subnormal Vision (3)

Description of the etiology and manifestations of disorders altering the vision mechanism. Development of necessary skills for evaluating subnormal vision with emphasis on records and examinations. Discussion of rehabilitation strategies for improving the visual function and assisting clients with subnormal vision to perform their daily activities.

Prerequisite: OPST 1020.

OPST 2021 - Entrepreneurial Development (2)

Introduction to the basic concepts of entrepreneurialism. Discussion of the legal, financial and professional Prerequisites for the design and implementation of a business plan in the field of optics.

OPST 2103 - Ophthalmic Materials III (2)

Introduction to the methods and procedures for edging lenses with a focal point. Use of polishing machines, the marking, blocking and the generator. Application of the removal of layout and other pertinent tools. Practice in the techniques of repair of frames or glasses and the use of the furnace for hardening of lenses. Requires 15 hours of lecture and 45 of lab.

Prerequisite: OPST 1002, 2010.

OPST 2913 - Supervised Practice (4)

Clinical experience supervised by a licensed optician or optometrist. Application of techniques and knowledge acquired, such as: operational aspects of the optical laboratory and basic technical related to the manufacture of ophthalmic lenses and prescription dispatch. Application of the ethical-legal principles when carrying out your role. Requires 240 hours of supervised clinical practice.

Prerequisite: OPST 1012.

ORBE - ORGANIZATIONAL BEHAVIOR

ORBE 2000

ORBE 2100 - Group Dynamics (3)

Study of the concepts related to the dynamics that occur in work groups and teams. Discussion of development processes, communication, conflict management, decision making and motivation of work teams. Analysis of the effect of group dynamics on the organizational culture and efficiency of the company.

Prerequisite: BADM 2050.

ORBE 3000

ORBE 3100 - Research methods and their applications in organizational behavior (3)

Discussion of the main research methods used to explore issues relevant to organizational behavior. Identification of the problem, development of hypotheses and research questions, dependent and independent variables and verification of validity and reliability. Exploration of methods to collect data such as questionnaires, experiments, content analysis, focus groups and interviews. Evaluation of academic articles related to organizational sciences. Preparation of a literary review using an American Psychology Association (APA) style writing.

Prerequisite: MAEC 2221.

ORBE 4000

ORBE 4000 - Ethics and Organizational Management (3)

Discussion of the ethical principles faced by managers and leaders in organizations. Analysis of the ethical dilemmas faced by local and international companies. Integration of ethical considerations into organizational management.

ORBE 4100 - Organizational Development (3)

Discussion of the theories, methods and tools used in the organizational development process to increase the effectiveness of the company. Analysis of definitions and models, change leadership, elements for discovery and diagnosis, individual, group and institutional interventions, and organizational transformation.

ORBE 4200 - Integrating Seminar in Organizational Behavior (3)

Integration of the knowledge, skills and attitudes required as an administrator and leader in a company. Investigation of a topic related to the effect of organizational behavior on the development of a company. Critical analysis, evaluation and recommendations in situations that occur in the work environment.

Prerequisite: Have approved 21 concentration credits.

PHAR - Pharmacy Technician

PHAR 1150 - Theoretical Pharmacy (3)

Discussion of the origin and evolution of the pharmacy. Includes the types of pharmacy and the components of a prescription counter: equipment, materials and personnel. Analysis of the functions of the Pharmacy Technician in different scenarios. Study of the prescription and its parts, the pharmaceutical abbreviations, the medicine label and the labeling.

PHAR 1155 - Pharmaceutical Legislation (2)

Study of state and federal laws that govern the pharmaceutical practice related to the production and distribution of product on sale in commercial pharmacies. Includes the labor laws that affect the pharmacy technician and the discussion of basic concepts related to the pharmacy.

PHAR 1220 - Human Anatomy and Physiology (3)

Study of the fundamental concepts of biology with emphasis in the structure and function of the human systems. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: BIOL 1003.

PHAR 1221 - Pharmacy Practice I (3)

Study of the practical aspects of filling a prescription. Discussion of the aspects related to the equipment used in pharmacies for dispatching solid and liquid medicines and medicines that require composition. Emphasis on federal legend medicines. Requires 30 hours of lecture and 45 hours of lab.

Prerequisite: PHAR 1150.

PHAR 1271 - Applied Pharmacology I (3)

Study of drugs in agreement with their therapeutic use and the way medicines work in the digestive, cardiovascular, respiratory and nervous systems. Includes aspects on

toxicology, indications, precautions, contraindications and interaction of drugs.

Corequisite: PHAR 1220.

PHAR 1280 - Dosage (2)

Study of the aspects related to the dosage and the administration and interaction of medicines. Includes the aspects related to appearance, such as injections, liquids, solids, semisolids, and suppositories.

Prerequisite: PHAR 1150.

PHAR 1290 - Pharmaceutical Mathematics (3)

Study of the mathematical foundations and application of pharmaceutical calculations that pharmacy technicians must master to perform adequately in their work scenario.

Prerequisite: GEMA 1000.

PHAR 2190 - Integration of Pharmacy Concepts (2)

Integration of concepts and skills related to mathematics, pharmacy practice, pharmacy theory, pharmacotherapy and laws related to the discipline.

PHAR 2200 - General Chemistry for Pharmacy Technicians (3)

Theoretical and practical study of the fundamental principles of the structure and behavior of matter, with emphasis on the processes and substances of biological and pharmaceutical importance. In the laboratory there will be emphasis on the practice of analysis techniques. Requires 30 hours of lecture and 45 hours of lab.

PHAR 2210 - Commercial Pharmacy (3)

Study of the practical aspects of the functions of the technician in a commercial pharmacy. Includes the purchase and organization of medicines, inventory, medical plans, the manufacturers, the commercial and generic name of drugs, as well as the handling and legal aspects related to controlled products. Application of the computer in the pharmacy and the commercial software used in the prescription processing. Requires 30 hours of lecture and 45 hours of lab.

Prerequisite: PHAR 1221.

PHAR 2222 - Pharmacy Practice II (3)

Discussion of the skills and procedures used in the hospital pharmacy. Includes the study of different over the counter medicines, OTC, contraceptive methods, medicine classification during pregnancy and the health accessories

and products on sale in pharmacies. Requires 30 hours of lecture and 45 hours of lab.

Prerequisite: PHAR 1221.

PHAR 2260 - Pharmacognosy (3)

Study of drugs derived from natural products, their origin, extraction and purification methods, their chemical composition, therapeutic use, and their effects on the organism. Includes study of drugs obtained through biosynthesis in pharmaceutical laboratories.

PHAR 2272 - Applied Pharmacology II (3)

Study of drugs in agreement with their therapeutic use and the way medicines work in the intergumentary, skeleton-muscular, visual, auditory, endocrine, genital-urinary and reproductive systems, as well as the more common infectious processes of these systems. Discussion of aspects on toxicology, indications, precautions, contraindications and interaction of drugs. Study of medicines used in chemotherapy and for the acquired immunodeficiency syndrome.

Prerequisite: PHAR 1220.

PHAR 2913 - Supervised Practice I (3)

Application of the knowledge and skills acquired and related to the use of the minimum equipment available in a prescription counter, the preparation and documentation of the patient profile and the dispatching of a medical prescription accurately. This practice will be performed in a commercial or institutional pharmacy under the supervision of a licensed pharmacist (teacher). The student must obtain the Registration Certificate as a Pharmacy Technician Intern upon meeting the Prerequisites and submitting the documents required by the Board. Requires the authorization of the program coordinator or a representative, a certificate of no criminal record, a health certificate and a negative doping test realized a month before beginning the practice and a certificate of vaccination against hepatitis B. In addition, students must meet any additional Prerequisites the practice center may ask for. Requires a total of 280 hours of practice during the academic term.

Prerequisite: PHAR 1155, 1221, 1280, 1290 and 1271 or 2272.

PHAR 2914 - Supervised Practice II (4)

Application of the knowledge and skills acquired in prescription preparation by means of the use of commercial pharmacy program. Includes the administrative aspects of

handling inventory and the purchase of merchandize. This practice will be realized in a commercial or institutional pharmacy under the supervision of a licensed pharmacist (teacher). Student must present a certificate of no criminal record effective and a current health certificate. In addition, they must meet the additional Prerequisites that the practice center may ask for. Requires a total of 360 hours of practice during the academic term.

Prerequisite: PHAR 2913.

PHAR 2915 - Supervised Practice III (4)

Application and integration of the knowledge and skills acquired in a practice in a pharmacy to complete the hours required by the Board of Pharmacy. Emphasis on over the counter medicines (OTC). Includes the sale of health devices and the recommendations for their use. This practice will be realized in a commercial or institutional pharmacy under the supervision of a licensed pharmacist (teacher). Students must present a negative certificate of criminal records, a health certificate and a negative doping test taken a month before beginning the practice. In addition, they must meet the additional Prerequisites that the practice center may ask for. Requires a total of 360 hours of practice during the academic term.

Prerequisite: PHAR 1271, 2272, 2260, 2914.

PHIL - Philosophy

PHIL 2013 - Types and Problems in Philosophy (3)

Values that arise from the human experience and the attempt to answer basic problems of knowledge, ethics and religion are examined through the different philosophies of life.

PHIL 2020 - Introduction to Humanistic Studies (3)

Integration of humanistic knowledge with a philosophical approach typical of Humanistic Studies. It includes philosophical reflection on language, aesthetics, religion, history, society, culture, science and technology, through a logical and critical approach to the issues of everyday life relevant to today's world.

PHIL 2354 - Modern Logic (3)

Study of informal fallacies. Formal logic: the logic of propositions, including the symbolization of propositions and inferences; the truth-table method; and the logic of propositional functions.

PHIL 3013 - History of Western Philosophy: Ancient and Medieval (3)

Philosophical thinking from its beginnings in ancient Greece and Rome to the Medieval Age in the context of the social, economic and political forces of the periods.

PHIL 3021 - History of Western Philosophy (3)

Philosophical thinking from the Renaissance to the philosophy of Immanuel Kant in the 18th century.

PHIL 3022 - Nineteenth Century Philosophy (3)

Study of Comte (Logical Positivism), Nietzsche (the Will to Power), Marx (Dialectical Materialism), Kierkegaard (Existentialism) and other philosophers.

PHIL 3040 - Philosophical Studies of Culture (3)

Philosophical study of the different processes of organization and sociocultural adaptation from an interdisciplinary perspective. Emphasis on human behavior of evolution, systems, processes and changes of society and the person. Case study in understanding the dynamics of sociocultural systems.

Prerequisite: PHIL 2020.

PHIL 3044 - Contemporary Philosophy (3)

The creative evolution of Bergson, the pragmatism of James and Dewey, the philosophy of "Organism" of Whitehead and Russell, the existentialism of Heidegger, Sartre and Jaspers, and the methodology of logical empiricism.

PHIL 3365 - Ethics (3)

The development and nature of morality and ethical theories, and the application of ethical principles to present-day problems of personal and social morality.

PHIL 3375 - Social Philosophies (3)

After a brief historical background, emphasis is placed on various social philosophies.

PHIL 4353 - Philosophy of Religion (3)

Critical examination of such religious concepts as God and proof of the existence of God, of what is holy, the problem of evil, miracles, the immortality of the soul, and an examination of the tension between faith and reason.

PHIL 4374 - Philosophy of Science (3)

After a brief historical background, emphasis is placed on the assumptions of modern science and the meaning of

generic concepts in science such as space, time, law, causality, and the content and values of scientific knowledge and their implications.

PHIL 4385 - Philosophy of History (3)

After a historical background, emphasis is placed on modern philosophies of history: Spengler, Toynbee, Schweitzer, Whitehead, Northrop and others.

PHTH - Physical Therapy Assistant

PHTH 1000 - Introduction to Physical Therapy (3)

Description of the historical development of the physical therapy profession. Discussion of physical therapy as a profession, the role and functions of the physical therapy assistant as well as the relation between the physical therapy assistant and the registered physical therapist; the interdisciplinary team within the system of health service providers. Explanation of the practice areas of the discipline, professional physical therapy organizations, standards, ethical-legal aspects related to the practice and the social responsibility of the physical therapy assistant.

Corequisite: PHTH 1010.

PHTH 1010 - Principles of Patient Care (3)

Description of the basic principles of patient care in physical therapy. Discussion of the concepts related to the control of infections and the taking of vital signs. Application of techniques related to corporal mechanics during the transfer and basic positioning of the patient and the use of the wheelchair. Emphasis on the basic fundamentals for the care of wounds, application of bandages and basic actions in an emergency situation. Requires 30 hours of lecture and 45 horas of lab.

Corequisite: PHTH 1211.

PHTH 1211 - Anatomy and Physiology I (4)

Integration of theory and laboratory skills for investigation of the structure and function of the human body. Study of the corporal organization at its different levels, the importance of chemistry in corporal processes, the corporal systems related to support and movement, and how these systems work to maintain homeostasis. Includes the study of the structure and function of the following systems: integumentary cardiovascular, respiratory, skeletal, muscular and nervous, (central and peripheral). Requires 45 hours of lecture and 45 hours of closed lab.

PHTH 1212 - Anatomy and Physiology II (2)

Integration of the theory for researching the structure and

function of the human body at its different levels. The importance of chemistry in the corporal processes and how the systems work to maintain homeostasis. Includes the structure and the function of the following systems: sensorial, lymphatic, immunological, endocrine, digestive, urinary and reproductive.

PHTH 1222 - Therapeutic Modalities (5)

Study of the principles and practices of physical therapy when applying the following therapeutic modalities: application of heat and cold, massage, traction and intermittent compression, thermotherapy, hydrotherapy, light therapy and electrotherapeutics. Discussion of the effect of the physical agents in dealing with pain and the inflammatory process. Requires 45 hours lecture and 90 hours of closed lab.

Prerequisite: PHTH 1000, 1010, 1211. Corequisite: PHTH 1212, 1223.

PHTH 1223 - Pathology (3)

Discussion of the pathophysiological process of diseases and dysfunctions commonly found in physical therapy practice in the geriatric and pediatric populations, and in those related to sports. Emphasis on the description of etiology, clinical manifestations and pattern of incapacity in pathological conditions related to the muscle-skeletal and neurological systems. Identification of the implications that diseases have for rehabilitation in physical therapy.

Prerequisite: PHTH 1000, 1010 , 1211. Corequisite: PHTH 1212, 1222.

PHTH 2050 - Dimension of Incapacity (2)

Discussion of the psychological, sociological and emotional elements as well as their impact on the rehabilitation of the patient. Emphasis on the emotional biases and the physical restrictions in the corporal image and in the sensorial perceptual process.

Prerequisite: PHTH 1000.

PHTH 2051 - Communication Skills in Physical Therapy (2)

Development of skills in data collection, evaluation and documentation of verbal and written reports. Principles of communication between the patient and the physical therapy assistant, the assistant and the physical therapist, as well as with other members of the health team.

Prerequisite: PHTH 1000, 1010.

PHTH 2053 - Cardiopulmonary Physical Therapy (3)

Discussion of the pathophysiological process of diseases and dysfunctions of the cardiovascular and respiratory system commonly found in the practice of physical therapy. Emphasis on etiology, clinical manifestations and pattern of incapacity in cardiopulmonary conditions. Requires 30 hours of lecture and 45 hours of closed lab.

Prerequisite: PHTH 1212, 1222, 1223.

PHTH 2054 - Kinesiology and Functional Anatomy (3)

Advanced study of the structure and function of the skeletal, muscular and nervous systems as well as their applications. Includes goniometry, tests of muscular force, analysis of ambulation and posture. Requires 30 hours of lecture and 45 hours of closed lab.

PHTH 2055 - Growth and Human Development (2)

Review of the basic knowledge of the theories of growth and development, as well as of the changes that occur throughout the life cycle. Study of physical, mental, emotional and sociocultural aspects typical of development. Emphasis on concepts of control and motor learning. Includes basic concepts of development and aging of the corporal systems.

PHTH 2151 - Orthopedic Rehabilitation (3)

Discussion of basic fundamentals for the rehabilitation of orthopedic conditions. Emphasis on interventions related to measurement and tests of the muscular and skeletal system, such as scope of movements, goniometry and muscular tests. Includes interventions, such as training, therapeutic and postural exercises, among others. Requires 30 hours lecture and 45 hours of closed lab.

Prerequisite: PHTH 2053, 2054, 2055.

PHTH 2350 - Neurological Rehabilitation (4)

Discussion of the rehabilitation of neurological conditions. Emphasis on interventions related to the measurement and tests of the central and peripheral nervous system. Includes interventions such as, training in daily life activities, functional training and in ambulation, use of prostheses and orthoses and handling pediatric and geriatric patients with neurological conditions. Requires 30 hours of lecture and 90 hours of closed lab.

Prerequisite: PHTH 2053, 2054 and 2055.

PHTH 2921 - Internship in Physical Therapy I (2)

Supervised clinical experiences aimed to integrate the technical skills and knowledge of a physical therapist assistant. It applies the basic knowledge of patient care, care of wounds, therapeutic modalities, respiratory exercises, pulmonary hygiene techniques, aerobic capacity and resistance, as established in the patient's care plan designed by the physical therapist. Practice in an agency of physical therapy services, under the supervision of a clinical instructor. Requires one hundred twenty (120) hours of practice.

Prerequisite: PHTH 2053, 2054, 2055.

PHTH 2922 - Internship in Physical Therapy II (3)

Supervised clinical experiences aimed to integrate the technical skills to perform the roles expected of a physical therapist assistant. Emphasis on functional training, technical therapeutic exercises for neurological and orthopedic rehabilitation, as identified in the patient's care plan established by the physical therapist. Full-time practice in an agency of physical therapy services, under the supervision of a clinical instructor. Requires one hundred eighty (180) hours of practice.

Prerequisite: PHTH 2921, 2151, 2350.

PHTH 2923 - Internship in Physical Therapy III (4)

Full-time supervised clinical experience aimed to integrate the technical skills and knowledge required of a physical therapist assistant. Practice under the supervision of the clinical instructor, in an agency of physical therapy services. Requires two hundred forty (240) hours.

Prerequisite: PHTH 2922.

PHTH 2990 - Integration Seminar in Physical Therapy (2)

Discussion of current situations and trends in the health care services that have an impact on physical therapy and the role of the physical therapy assistant. Integration of ethical-legal principles and the results of research in the profession in the discussion of matters related to the practice of the physical therapy assistant.

Prerequisite: PHTH 2151, 2350, 292.

PHYS - Physics

PHYS 1013 - General Physics and its Applications (4)

Fundamentals of the various divisions of physics. Designed for students not majoring in a science. Emphasis is placed on the application of physics to other sciences. Requires 45 hours of lecture and 45 hours of lab.

PHYS 3001 - General Physics I (4)

Logical and unified presentation of physics at the introductory level, emphasizing the basic ideas constituting its foundations: laws of motion and the conservation and interaction between particles and fields. Students are exposed to different experiences in the fields of mechanics and heat in the teaching-learning process. Emphasis on the integration and application of concepts throughout the experimentation. Requires 45 hours of lecture and 45 hours of lab.

Prerequisite: MATH 1500 or 1512.

PHYS 3002 - General Physics II (4)

Continuation of the study of conservation laws, the interaction between particles and fields and the atomic description of matter. Students are exposed to different experiences in the areas of electromagnetism, waves and modern physics. Emphasis on the integration and application of concepts throughout the experimentation. Requires 45 hours of lecture and 45 hours of lab.

Prerequisite: PHYS 3001.

PHYS 3300 - Physics for Videogames (4)

Application of physical phenomena related to the design and development of video games. Emphasis will be placed on the concepts of kinematics, dynamics, simple harmonic movement and fluids for the design and development of video games. Implementation of the different concepts in a programming language, through the laboratory experience in which the virtual world will be contrasted with the physical one. It requires 45 hours of lecture and 45 hours of closed laboratory.

Prerequisite: COMP 2300 and MATH 2251.

PHYS 3311 - Physics for Engineers I (4)

Linear and planar motion. Newton's laws. Work and energy; impulse, momentum. Rotational motion, simple harmonic motion; equilibrium of rigid particles and bodies. Requires 45 hours of lecture and 45 hours of lab.

Prerequisite: MATH 2251.

PHYS 3312 - Physics for Engineers II (4)

Coulomb's law, electric forces, electric field and its potential; capacitance and dielectric materials. Ohm's law, Kirchhoff's laws, magnetic fields, electromagnetic induction, alternate current circuits and electromagnetic waves. Requires 45 hours of lecture and 45 hours of lab.

Prerequisite: PHYS 3311, MATH 2252.

PHYS 3500 - Physics for Aviators (4)

Application of the principles and concepts of physics to the study of aviation sciences. Emphasis on the concepts of Newtonian mechanics, work and energy, fluids, thermodynamics, electronics and circuits, dynamics of flight and introduction to aerodynamics. Requires 45 hours of lecture and 45 hours of lab.

Prerequisite: MATH 1500 or 1512.

POLS - Political Science

POLS 1011 - Introduction to Political Science (3)

Introduction to basic concepts, institutions and processes of political science.

POLS 2040 - Government of the United States (3)

Influence of people, processes and the political culture on the structure and functions of the federal government; the dynamic forces of growth, technological development, wars and recessions and how these have altered the development of a pluralistic society.

POLS 2088 - Government of the Commonwealth of Puerto Rico (3)

Governmental institutions and political processes in the Commonwealth of Puerto Rico; emphasis on the power structure, role of political parties, interpersonal relationships, the status question and recent trends and events.

POLS 2100 - Political Analysis and Research Techniques (3)

Introduction to research design, investigation methods, strategies and tools to be used in field investigations in Political Science and to the formulation of theories. Emphasis on the application of the scientific method in the analysis of political data, the formulation of research problems and hypotheses and the basic techniques of statistical analysis for Social Sciences.

POLS 3000 - WRITING FOR POLITICAL SCIENCE (3)

Application of bibliographic research and writing skills. It includes the writing of monographs, review of scientific literature, critical analysis and scientific research reports using the various editorial styles and citation methods applied in Political Science.

POLS 3050 - Ethics, Religion and Politics (3)

Analysis of the impact of religion and ethics on the political development of society and the changes over time in the relations between religious practice and government.

POLS 3060 - PRINCIPLES OF ECONOMICS FOR POLITICAL SCIENCE (3)

Study of economic policy applied to the problems of contemporary governance. Discussion on macroeconomic indicators, fiscal policy, preparation and analysis of public budgets and the effect on local, national and regional economies of economic cycles. Observation and analysis of the concepts studied applied to current situations and their relationship with political ideologies.

POLS 3080 - Political Economy (3)

Review of the main theories of political economy, its structures and the relationship between the political and economic systems in industrialized countries as well as in developing countries. Current topics are discussed.

POLS 3100 - Comparative Government and Politics (3)

Different political systems found in the world today; emphasis on recurrent patterns and elements of the political process.

POLS 3150 - Introduction to International Relations (3)

Basic study of international interactions in the modem world; international alliances and conflicts; some of the global challenges faced by the world today.

POLS 3170 - International Conflicts (3)

Analysis of the world-wide and historical phenomenon of war and international conflicts. Emphasis on intervention strategies and the the theories on war beginning from antiquity to the present time. Includes the study of the effect of war on the economy.

POLS 3190 - United States Foreign Policy (3)

United States' foreign policy from 1939 to the present; special attention to United States - Soviet relations; United States' policy toward the Third World; how the government decision-making process operates in the field.

POLS 3200 - Political Sociology (3)

Analysis of the historical origin of political parties, their organization and their relation with the political system. Study of methods for analyzing how the social system affects political order. Review of the sociopolitical experiences of Puerto Rico, the United States and Latin America. Study of the social bases of the political, socialization and, participatory process and the relationship between the elite and the masses. Discussion of the impact of class, race, religion and gender in political practices and behavior, in the development and organization of political parties and their relation with the political system.

POLS 3300 - Human Rights (3)

Analysis of the evolution of human rights at the international level and the legal instruments established to protect them. Evaluation of the impact and importance of human rights in the traditions of western and eastern countries. Review of the importance of human rights in the contemporary world. Discussion of the ideological and cultural perspectives, sources of violations, the role of the United Nations and national governments, the human rights of women and children and the influence of nongovernmental organizations in international protection of human rights.

POLS 3401 - Classic Political Thought (3)

Ideas and theories of outstanding political philosophers from classical political thought to the French Revolution.

POLS 3402 - Modern Political Thought (3)

Ideas and theories of outstanding political philosophers from the French Revolution to the present.

POLS 3450 - LEGISLATIVE PROCESS (3)

Analysis of the dynamics and substantive content of legislative work based on its philosophical, historical, legal and organizational bases, as well as its functions and activities in the context of representative democracy. Understanding of the legislative process, the drafting and evaluation of legislative measures and ethics, in matters of public interest both in Puerto Rico and in the United States.

POLS 3501 - Political Systems of Latin America (3)

Review of the patterns, institutions and process of modem government and politics in Latin America.

POLS 3502 - Contemporary Political Problems in Latin America (3)

Political problems in light of recent developments in various countries of Latin America; emphasis on most recent research on political change.

POLS 3503 - Caribbean Political Systems (3)

Analysis of governmental processes and the political practices of Caribbean countries, with special attention in the Hispanic Caribbean. Includes current problems.

POLS 3504 - Middle East Politics (3)

Analysis of the political culture, the history and the economic and social dynamics of the Middle East with greater in-depth study given to in the countries of Egypt, Israel, Iraq, Iran and Turkey.

POLS 3610 - Relations Between the United States and Puerto Rico (3)

Analysis of the changing forces that have had an impact on the relations between the United States and Puerto Rico since 1898, with emphasis on factors like: the economic and political relations, federal aid, the Law of Federal Relations and its impact, and the preparation of the Puerto Rican budget.

POLS 3700 - Women and Their Political Development (3)

Analysis of worldwide policy from the perspective of gender. Discussion of the participation of women in politics, their participation in political institutions and the policies that affect women and their participation in the Puerto Rican and Latin American political process. Study of topics on the different interpretations of women's concerns promoted by feminist and pro-family movements, the matter of gender as opposed to the economic and social policies of the contemporary world and the problems on political equality around the world.

POLS 3800 - Government, Ecology and Public Environmental Public Policy (3)

Integration of the study of politics, defined as the exercise of power, with ecology, defined as the impact of human activity on the environment. Analysis of the effects of the perceptions and responses of political actors on the insular and international environment.

POLS 3820 - Public Administration (3)

Analysis of the fundamental elements of administration of governments: knowledge of the organization and the functions the state and municipal governments. Includes the fiscal policy and other related administrative processes.

POLS 3910 - Electoral Processes (3)

Analysis of the diverse ways to choose governments at the world-wide level. Study of electoral laws, and processes and international observers. Emphasis on the historical cases of Puerto Rico, the United States, Europe and Latin America. Includes the new electoral processes in Africa and Asia.

POLS 4033 - Inter-American Relations (3)

Study of international relations in the American hemisphere and their impact on the new social, political and economic order in the region as opposed to globalization and regionalization, particularly in the new integration processes of Latin American and the Caribbean. Discussion of comparative and multidisciplinary perspectives on critical problems of the region such as development and modernization and political change.

POLS 4055 - Public Opinion and Propaganda (3)

Pressure groups, polls and other institutions affecting public opinion; emphasis on Western societies; international propaganda and political warfare.

POLS 4100 - Contemporary World Politics (3)

Analysis of the economic, social, ecological and commercial effects in the evolution of the contemporary global policy since the Cold War.

POLS 4110 - Constitutional Law (3)

Case study of the American Constitution; court decisions in regard to principles affecting the individual, state and federal relationships.

POLS 4300 - Public Policy (3)

Review of the theoretical and practical aspects of the relation between the development of social justice and human rights in society. Study of the status of laws legislated by governments.

POLS 4530 - Political Psychology (3)

Analysis of the principles, basic concepts, study methods and scientific research used by political psychology. Review of the formative differences of a psychosocial behavioral nature to light of the ideological factors that sustain each sociopolitical system such as: democratic systems, socialist systems, totalitarian systems and colonial systems, among others.

Prerequisite: PSYC 1051.

POLS 4540 - Latin American Political Thought (3)

Main contributions of Latin American thinkers to political philosophy in general and to modern ideologies in particular.

POLS 4620 - Government and Politics in Developing Areas (A, B, C, D, F, I) (3)

Overview of government and politics in several developing

areas (outside of Latin America). Focus will be determined and announced by the Department each time the course is offered.

POLS 4700 - SPECIAL TOPICS IN POLITICAL SCIENCE (3)

Discussion and analysis of special current issues relevant to the study of Political Science. Application of research techniques typical of Political Science.

Prerequisite: POLS 1011 .

POLS 4900 - Seminar on Political Research (3)

Development of a research project with an integrating vision of the theories of the disciplines. An oral and written presentation of a monograph that shows the application of one or several research techniques.

POLS 4955 - Interdepartmental Studies (3)

Selected problems in political development taught in conjunction with faculty of other programs to afford an interdisciplinary approach; nature of the problems to be announced by the cooperating programs each time the course is offered. Admission: consent of instructors.

Prerequisite: Authorization of instructor.

PORT - Portuguese

PORT 1001 - Elementary Portuguese (4)

Essentials of Portuguese grammar with emphasis on the spoken language. Practice in reading and understanding at the elementary level.

PORT 1002 - Elementary Portuguese (4)

Essentials of Portuguese grammar with emphasis on the spoken language. Practice in reading and understanding at the elementary level.

PORT 1011 - Portuguese I (3)

Introduction to the Portuguese language, through the immersion method. Emphasis on oral communication skills (listening / speaking), reading, writing, and visual interpretation. It requires additional hours of open laboratory.

PORT 1012 - Portuguese II (3)

Study of the Portuguese language, through the immersion method. Emphasis on oral communication skills (listening / speaking), reading, writing, and visual interpretation. It requires additional hours of open laboratory.

Prerequisite: PORT 1011.

PORT 2021 - Portuguese III (3)

Study of the Portuguese language at an intermediate level through the application of the immersion method. Emphasis on oral communication skills (listening / speaking), reading, writing, and visual interpretation. It requires additional hours of open laboratory.

Prerequisite: PORT 1012.

PORT 2022 - Portuguese IV (3)

Study of the Portuguese language at an advanced level by applying the immersion method. Emphasis on oral communication skills (listening / speaking), reading, writing, and visual interpretation. It requires additional hours of open laboratory.

Prerequisite: PORT 2021.

PORT 3010 - Diction and Phonetics (3)

Strengthening of oral communicative competence. Study of the sounds, intonation and rhythm of the Portuguese language through basic knowledge of phonetics. Oral practice through the reading of short texts, oral presentations and simulation of everyday situations. It requires additional hours of open laboratory.

Prerequisite: PORT 2022.

PORT 3020 - Advanced Writing (3)

Strengthening of the communicative competence written in Portuguese. Study of discursive genres in Portuguese from everyday, academic and professional life. Identification of the registers of the language and the pertinent grammatical elements in order to write clearly and coherently, using an appropriate vocabulary.

Prerequisite: PORT 2022.

PORT 3021 - Portuguese Literature (3)

Discussion of key texts of Portuguese literature from the Middle Ages to the seventeenth century and the schools or literary periods that frame them. Emphasis on the study of literary history, critical reading, and literary analysis.

Prerequisite: PORT 3010 y PORT 3020.

PORT 3022 - Portuguese Literature (3)

Analysis of key texts of Portuguese literature from the 18th century to the end of the 20th century and of the schools or literary periods that frame them. Emphasis on the study of

literary history, critical reading, and literary analysis.

Prerequisite: PORT 3021.

PORT 4010 - Portuguese Culture and History (3)

Study of issues related to contemporary Portuguese culture from a historical approach. Analysis of texts of various genres, as well as visual arts from an intercultural approach.

Prerequisite: PORT 2022.

PSYC - Psychology

PSYC 1051 - General Psychology I (3)

Discussion of the historical origins of psychology. The subjects to be studied include the biological bases of conduct, development and human growth, human sexuality, personality, psychopathology and social psychology.

PSYC 1052 - General Psychology II (3)

Description of the principles and the basic methods of psychology and its relation to the neurosciences applied to conduct and the psychological processes. Includes the discussion of subjects, such as sensation, perception, consciousness, thought, memory, intelligence, learning, motivation and emotion.

Prerequisite: PSYC 1051.

PSYC 2001 - Writing in Psychology (3)

Application of the skills of bibliographical research and writing. Includes the writing of monographs, review of scientific literature, critical analysis and reports of scientific research using the American Association of Psychology (APA) publishing style.

PSYC 2010 - Developmental Psychology (4)

Review of the physical, cognitive and psycho-social processes of development, from conception to death.

Prerequisite: PSYC 1052.

PSYC 3001 - Statistical Methods I (3)

Statistical techniques and their practical application as used in the field of the behavioral sciences. Special emphasis given to descriptive statistics.

Prerequisite: GEMA 1000.

PSYC 3002 - Statistical Methods II (3)

Statistical inference, probability and the statistical inference with independent and correlated models. Requires 45 hours of lecture and 15 hours of lab.

Prerequisite: PSYC 3001.

PSYC 3100 - Learning (3)

Analysis of the conditions and fundamental principles of the process of learning derived from scientific research. Emphasis on classic conditioning, operating conditioning, cognitive psychology of learning, motivation and emotion. Includes the study of individual differences.

Prerequisite: PSYC 1052.

PSYC 3113 - Physiological Psychology (3)

Study of the relation between behavior, physiological processes and the nervous system. Emphasis on theories and empirical findings related to physiological psychology and neuroscience.

Prerequisite: PSYC 1052 and BIOL 1006.

PSYC 3144 - Motivation and Emotion (3)

Investigation of the theories and studies related to motivation and emotion, as well as their effect in human behavior.

PSYC 3200 - Comparative Psychology (3)

Discussion of the evolution and development of animal behavior from a comparative perspective. Analysis of the mechanisms by which the environment and evolutionary processes determine animal behavior. Comparison of behavioral differences of varied species with human behavior.

PSYC 3221 - Life Cycle I (3)

Analysis of the cultural, physical, cognitive, social and emotional aspects of development from the pre-natal through the pre-adolescent period. Emphasis on the processes underlying the acquisition and development of behavior throughout the developmental periods; normative behavior for particular ages and developmental stages. Evaluation of selected theories, contemporary issues and practical applications.

PSYC 3222 - Life Cycle II (3)

Analysis of the cultural, physical, cognitive, social and emotional aspects of development from adolescence through senescence. Emphasis on the processes

underlying the acquisition and development of behavior. Normative behavior for particular ages and developmental stages. Evaluation of selected theories, contemporary issues and practical applications.

PSYC 3268 - Introduction to Counseling and Psychotherapy (3)

Review of the main approaches and psychotherapeutic models. Emphasis on the basic skills of counseling and psychotherapy, their application in the diverse clinical-therapeutic scenarios and their ethical aspects, Includes the models of individual, group and family therapy.

PSYC 3300 - Social Psychology (3)

Analysis of the development of social psychology considering the social I, the social perception, social influence, the social relations and their application to the reality of the social context.

Prerequisite: PSYC 1051.

PSYC 3313 - Introduction to Industrial-Organizational Psychology (3)

Study of the origins of Industrial-Organizational Psychology as a scientific and application discipline. Emphasis on the subjects related to psychology of the human resource, organizational psychology and the labor environment.

PSYC 3315 - Introduction to School Psychology (3)

Review of the origin and evolution of school psychology as a specialization for psychologists in Puerto Rico. Emphasis on the code of ethics and roles of the school psychologist. Includes aspects of mental retardation and learning problems.

PSYC 397_ - Special Topics (3)

Special Topics in Psychology.

PSYC 4000 - Fundamentals of The Psychological Interview (3)

Analysis of the principles and application of psychological interview as an instrument of evaluation, follow up and decision making.

PSYC 4100 - Behavior Modification (3)

Analysis of the theories, principles, methods and controversies in the modification of conduct. Emphasis on the design of programs for conduct modification. Includes simulations and analysis of cases.

Prerequisite: PSYC 3100.

PSYC 4103 - Community Psychology (3)

Investigation of the methods and theoretical models of community psychology and human behavior from a group perspective. Emphasis on practical experience to develop intervention skills and community evaluation. Includes preventive aspects of psychosocial problems.

Prerequisite: PSYC 3300.

PSYC 4113 - Contemporary Theories (3)

Development of psychology in recent times with emphasis on trends and issues in current psychological theory.

PSYC 4200 - Principles of Psychological Testing (3)

Principles and methods underlying the construction and evaluation of psychological tests. The process of psychological testing in a broad and dynamic context. The implications of psychological testing taking into account the sociocultural context of the person being evaluated.

Prerequisite: PSYC 1051, 3001.

PSYC 4210 - Cognitive Psychology (3)

Review of theoretical and empirical foundations of cognitive psychology. Emphasis is given to attention, memory, recognition of objects, motor control, spatial processing, executive functions, language, and intellectual processes.

Prerequisite: PSYC 3113.

PSYC 4213 - Psychopathology (3)

Analysis of the concept of the psychology of deviant or abnormal behavior. Emphasis on the historical background, the pertinent theories and the classification of conditions according to the Manual of Diagnosis and Statistics of current mental disorders. Includes the discussion of cases in which the different types of behavioral disorders appear.

Prerequisite: PSYC 2010.

PSYC 4234 - Psychology of Personality (3)

Analysis of the diverse approaches related to personality from a historical perspective. Emphasis on the analysis of the role assigned to personality as an object of study and treatment.

Prerequisite: PSYC 2010.

PSYC 4300 - Group Processes (3)

Theory and practical experience pertaining to small group behavior. Small group work to produce an awareness of group forces and pressures, and to develop insight into personal relationships.

PSYC 4313 - Organizational Psychology (3)

Organizational behavior. The role of individuals in the organizational environment. Application of experience in the field of organizational behavior.

Prerequisite: PSYC 1051.

PSYC 4520 - Crisis Intervention (3)

Discussion and application of models and techniques for intervention in crisis. Exposure to simulated practical experience in which psychotherapeutic methods are used.

Prerequisite: PSYC 1051.

PSYC 4600 - Experimental Psychology (4)

Exposure to the scientific method in the study of behavior. The rationale and methodology in the interpretation of data and design of experiments, as well as the application of research principles to theory and practice. Requires 45 hours of lecture and 30 hours of lab.

Prerequisite: PSYC 3002.

PSYC 4910 - Experience in Psychology Scenarios (3)

Supervised practice in scenarios or activities related to applied psychology or research. Requires 135 work-hours of practice or assigned research.

Prerequisite: Authorization of the professor and the department's chair.

PSYC 4971 - Integration Seminar (3)

Integration of the concepts, theories and principles of psychology as a science. Includes a work of original research of a relevant subject in the field of psychology, presented in written and oral form. The research will be presented according to the criteria of the "American Psychological Association" (APA).

Prerequisite: Have approved 50 credits of the major in psychology courses.

PUAD - Public Administration

PUAD 3300 - Government Accounting (3)

Principles and procedures applicable to governmental accounting: fund reporting, budget relations and interfund relationships will be emphasized.

PUAD 3510 - Public Budget Planning (3)

Role of the modern budget in determining policies regulating government operations, intergovernmental relations, and the government's relation to private sector. Emphasis on unit costs, work programs and budgetary analyses.

RATE - Radiological Technology

RATE 1110 - Patient Care (2)

Development of the ability to provide holistic care to the patient during radiological procedures. Discussion of the management and care of the physical needs of the patient during these processes, taking into consideration the ethical and legal aspects that regulate the profession. Development of basic skills related to effective communication, personal care, body fluid management and medical emergencies in radiological facilities. Requires 15 hours of conference and 30 hours of laboratory

Prerequisite: Be admitted to the Radiological Technology program.

RATE 1125 - Introduction to Radiological Technology and Ethical Concepts (2)

Study of the history and evolution of Radiological Technology. Discussion of the basic principles of radiation protection and contrast media. Description of the duties and responsibilities of the l futureprofessiona, with a focus on the ethical and bioethical concepts of the discipline. Development of positive attitudes towards their patients, teamwork and interaction with other people and professionals who are part of the interdisciplinary health team.

Prerequisite: Be admitted to the Radiological Technology program.

RATE 1130 - Radiation Protection (3)

Vision of the principles of radiation protection. The radiological technologist responsibilities for protecting patients, personnel and the public in general. Study of the agencies in charge of radiation protection and its regulations.

Prerequisite: Be admitted to the Radiological Technology program.

RATE 1141 - Biology and Radiographic Anatomy I (3)

Study of the basic concepts of Biology through radiographic analysis. It includes the components of the cell, tissues, organs, and systems of the body. Identify the fundamental aspects of the skeletal, muscular, nervous, and sensory systems of the human body from the anatomical and physiological point of view, using the radiographic images of the different diagnostic modalities.. Four hours of lecture.

Prerequisite: Be admitted to the Radiological Technology program.

RATE 1142 - Biology and Radiographic Anatomy II (3)

Study of the endocrine, reproductive, cardiovascular, lymphatic, immunological, excretory, respiratory and digestive systems of the human body from the anatomical, physiological and radiographic point of view, using radiographic images. The fundamentals of sectional anatomy related to radiographic routines are discussed.

Prerequisite: RATE 1101.

RATE 1221 - Radiographic Procedures and Evaluation I (2)

evaluation of radiographic procedures and techniques applied to the thorax, abdomen, upper extremities and pectoral girdle. Evaluation and critique of x-rays taken. Development of attitudes of respect, responsibility and confidentiality in the classroom as well as in clinical scene. Practical demonstrations will be used to facilitate the understanding of course contents. Requires 15 hours of lecture and 45 hours of lab.

Prerequisite: RATE 1110, 1125 AND 1130.

RATE 1230 - Principles of Radiographic Exposure And Processing (3)

Application of the essential concepts that control the training process, exposure, processing and storage in radiographic images. It requires 30 hours of conference and 30 hours of laboratory.

Prerequisite: RATE 1130.

RATE 2090 - Pharmacology and Venipuncture (3)

Study of the basic concepts of pharmacology, venipuncture and administration of contrast media and intravenous medications. Discussion of patient care during procedures that use contrast.

Prerequisite: RATE 1110.

RATE 2210 - Critique and Radiographic Quality Control (3)

Analysis of radiographic images and the factors that contribute to quality. Discussion of the importance of standards for an optimal image. Evaluation of clinical images to conduct radiographic critic sessions.

Prerequisite: RATE 2223.

RATE 2222 - Radiographic Evaluation and Procedures II (2)

Evaluation of radiographic procedures and techniques of the skeleton system, such as the lower extremities, the pelvic girdle, the spine and the thoracic box. Includes routine and special positions as well as the safe handling of patients with spinal trauma. Critical evaluation of x-rays taken. Development of attitudes of respect, responsibility and confidentiality. Practical demonstrations will be used to facilitate the understanding of course contents. Requires 15 hours of lecture and 45 hours of lab.

Prerequisite: RATE 1221.

RATE 2223 - Radiographic Evaluation and Procedures III (2)

Analysis of the positions, techniques, indications and contraindications of radiographic studies by using contrasts. Evaluation of radiographic quality, as well as the preparation of patients and allergic reactions. Includes basic positions for cranial and facial radiography. Practical demonstrations will be used to facilitate understanding of the course content. Requires 15 hours of lecture and 45 hours of lab.

Prerequisite: RATE 2090, 2222 and 2912.

RATE 2231 - Radiological Physics I (3)

Structure analysis and atomic terminology. Application of physical concepts related to the nature and characteristics of radiation, the production of X-rays and the fundamentals of photons and their interaction with matter.

Prerequisite: GEMA 1200 and RATE 1230.

RATE 2232 - Radiological Physics II (3)

Analysis of the basic concepts of the X-ray circuit. Emphasis on the physical principles of radiographic equipment, fluoroscopic and mobile units. In addition, the discussion of design Prerequisites for these equipment is

included.

Prerequisite: RATE 2231.

RATE 2240 - Radiographic Pathology and Medical Terminology (3)

Discussion of the basic concepts and medical terminology related to the disease and its etiological considerations in the different systems of the human body. Analysis of the radiographic appearance of the different diseases and their involvement in the selection of technical exposure factors.

Prerequisite: RATE 2222 and 2912.

RATE 2260 - Radiobiology (2)

Application of the principles of radiation interaction in living systems. Effects of radiation on molecules, cells, tissues, and the human body. Factors that affect the biological response, including the acute and chronic effects of radiation.

Prerequisite: RATE 1130 and 2232.

RATE 2270 - Diagnostic Image Modalities and Equipment (2)

General evaluation of the different diagnostic and treatment modalities, such as: Bone Densitometry (DEXA), Ultrasound (US), Computed Tomography (CT), Magnetic Resonance Imaging (MRI), Mammography, Angiography, Radiotherapy and Nuclear Medicine.

Prerequisite: RATE 2222, 2223.

RATE 2910 - Clinical Practice I (1)

Exposure to a current health care scenario and the standards of the profession and the basic and routine aspects of a radiology department. Observation of the steps for taking radiographs, from the arrival to the dismissal of the patient, such as the registration of the patient, the reading and interpretation of the radiographic request, the orientation to the patient, the execution of the radiographic procedure, the manipulation and the processing of the radiographic image. The student will perform 60 hours of supervised clinical observation in a simulated scenario and in the radiology department of an affiliated health institution.

Prerequisite: RATE 1110, 1125, 1130 and 1141.
Corequisite: RATE 1221 and 1230. .

RATE 2912 - Clinical Practice II (3)

Supervised clinical experiences aimed at the integration of cognitive, affective and psychomotor aspects of the student of radiological technology. Collaboration and participation in the execution of radiological procedures in the area of the thorax, abdomen, upper extremities and the pectoral belt. Application of values and positive attitudes that allow the development of independence and confidentiality in their work area, in order to provide excellent treatment to the people with whom they interact. It requires 180 hours of supervised clinical practice in an affiliated health institution.

Prerequisite: RATE 1221 and 2910.

RATE 2913 - Clinical Practice III (3)

Supervised clinical experiences directed to the integration of the cognitive, affective and psychomotor aspects of radiological technology students of. Collaboration and participation in the execution of radiological procedures in the area of the lower extremities, the pelvic girdle, the spine and the rib cage. Application of values and positive attitudes that permit the development of independence and confidentiality in their work area with the purpose of providing excellent treatment to the people with whom they interact. 270 hours of supervised clinical practice in an affiliated health institution.

Prerequisite: RATE 2222 and 2912.

RATE 2919 - Clinical Practice IV (3)

Supervised clinical experiences directed to the integration of the cognitive, affective and psychomotor aspects of radiological technology students. Collaboration and participation in the execution of radiological procedures in the area of the of the skull, facials and special studies. Application of the values and positive attitudes that permit the development of independence and confidentiality in their work area with the purpose of providing an excellent treatment to the people with whom they interact. Requires 180 hours of supervised clinical practice in an affiliated health institution.

Prerequisite: RATE 2223 and 2913.

RATE 3050 - Mammographic Quality Control (3)

Application of knowledge related to the recent regulations of the Mammography Quality Standards Act (MQSA) for the interpretation of the norm to be used for image quality control and its procedures. Emphasis on the consideration of the components related to radiographic quality in mammography equipment, screens and developing equipment and the check tests of quality that (MQSA) establishes.

RATE 3071 - Breast Anatomy and Vascular Pathology (3)

Analysis of the anatomy, physiology and vascular pathology of the breast in relation to radiographic studies. Includes the etiology and development of breast and vascular diseases. Discussion of screening guides recommended by the American College of Radiologists and the American Society of Cancer.

Prerequisite: RATE 2240.

RATE 3080 - Radiographic Procedures and Evaluation of the Breast (3)

Evaluation of the procedures and radiographic techniques applied to the breast. Includes examination of x-rays taken in the mammography equipment. Emphasis on the skills of managing radiographic quality, modalities analysis of the breast and special studies, such as ultrasound and magnetic resonance.

Prerequisite: RATE 3050, 3071.

RATE 3090 - Procedures of Angiography and Interventional Radiology (3)

Analysis of the basic aspects of angiography and interventional procedures. Includes the internal part of the blood vessels requiring angiographies and interventional procedures for their diagnosis and treatment. Emphasis on studies of cardiovascular angiography and adjacent organs and the procedures of interventional radiographic images that end in a terapeutic result.

RATE 4910 - Clinical Practice in Mammography (4)

Supervised practical experiences aimed to integrate knowledge, skills and attitudes. Application of procedures related to the study of the breast. Clinical experiences in different structured scenarios in affiliated and certified health institutions. Requires two hundred (200) hours of clinical practice.

Prerequisite: RATE 3050, RATE 3071.

RATE 4911 - Clinical Practice in Angiography (4)

Supervised practical experiences aimed to integrate knowledge, skills and attitudes. Application of procedures related to the study of the interior of blood vessels and the vascular diseases requiring angiographies for his diagnosis and treatment. Clinical experiences in different structured scenarios in affiliated and certified health institutions. Requires two hundred (200) hours of clinical practice.

Prerequisite: RATE 3060, 3090.

REAL - Real Estate

REAL 2500 - Real Estate Economics (3)

Application of the theory and economic principles in the real estate market. Analysis of the impact of socioeconomic changes, demographic trends, zoning, and government regulations on demand, supply, and real estate values and prices.

Prerequisite: MAEC 2212.

REAL 2600 - Legal Principles of Real Estate (3)

Discussion of legal and regulatory principles in the practice of real estate. Includes those related to the legal business of real estate, such as: subsidies and taxes of immovable property in municipal, state and federal jurisdictions.

REAL 2700 - Obligations and Contracts in Real Estate (3)

Discussion of contracts and the principle obligations that are used in the legal aspects of real estate. Analysis of the implications in the mortgage market and in trusts.

Prerequisite: REAL 2600.

REAL 3800 - Real Estate Funding (3)

Analysis of the basic principles that govern mortgage financing in Puerto Rico and financings with government insurances and securities. Includes the study of the laws and regulations that protect the consumer and those that regulate house subsidies.

Prerequisite: FINA 3500.

REAL 3900 - Administration Principles in Real Estate (3)

Analysis of the principles that govern the administration of real estate with emphasis on horizontal property laws. Discussion of topics of planning, administration of rents, contractual negotiation, human relations with employees and other relevant topics.

Prerequisite: MAEC 2212, BADM 2250.

REAL 4000 - Introduction to The Appraisal of Real Estate (3)

Analysis of the methods used to consider the value of real estate. Discussion of the basic principles on appraisal or evaluation methods, the necessary documentation, and the analysis of these to obtain an opinion on the value of an immovable property. Includes the study of the methods of

sale, comparisons, production costs and zoning. Evaluation of appraisal reports and their reconciliations.

Prerequisite: MAEC 2221, FINA 3500.

REAL 4100 - Ethics in the Real Estate Business (2)

Analysis of the ethical principles related to the real estate industry from a managerial perspective.

Prerequisite: FINA 3500.

REAL 4400 - Financial Markets and the Banking Sector in Real Estate (3)

Review of the relation of the capital markets with real estate. Includes the role of the financial system used in real estate markets. Analysis of the financial instruments of the secondary markets used in real estate investments.

Prerequisite: FINA 3500.

REAL 4910 - Internship (3)

Practical experience in the real estate field supervised jointly by a professor and a designated professional in the practice center. This practice is subject to the rules and regulations applicable to real estate in Puerto Rico. Requires a minimum of 90 hours to complete the designated work.

REEN - ENGINEERING TECHNOLOGY IN RENEWABLE ENERGY

REEN 1000

REEN 1010 - Introduction to Renewable Energy Systems (3)

Introduction to energy systems and renewable energy resources. Scientific analysis of the energy field emphasizing alternative energy sources, their technology and application. The current needs of our society and the demand for energy in the future are studied. It examines conventional energy sources and systems, including fossil fuels and nuclear power, then focuses on alternative renewable energy sources such as solar, wind, geothermal, hydroelectric, and biomass. Emphasis is placed on energy conservation methods.

REEN 2000

REEN 2010 - Audit and Energy Efficiency (3)

Introduction to the planning, execution, documentation and evaluation of an energy audit. Identify the potential causes that influence energy waste to suggest procedures and strategies that increase the energy efficiency of an industrial or residential facility. Measurement and interpretation of physical variables that allow evaluating the efficiency of a system or industrial facility. Management of instruments used in energy audits. Preparation of reports and procedures to reduce energy consumption, improve the safety and quality of life of the occupants of a building.

REEN 2110 - Wind Systems (3)

Study of wind energy as an alternative to renewable energy. Identification of the different types of turbines and conditions to obtain energy from the wind using the equations and power curves. Discussion of stand-alone wind systems using batteries, MPPT charge controllers, and auxiliary disconnect devices. Economic analysis of a wind system.

REEN 2120 - Microcontroller Programming Laboratory (1)

Study of the organization and architecture of microcontrollers. Programming ports 1/0 of the microcontroller. Development and implementation of a project using a modern microcontroller. It requires 45 hours of laboratory.

Prerequisite: ELEC 2131.

REEN 2910 - Integrated Practice and Professional Ethics (3)

Supervised professional practice in a real work setting. Design and production of professional quality materials, as well as creative solutions to problems inherent in the field of graphic communication. Requires a minimum of 180 hours of practice under the supervision of a specialist in the area and approval with a minimum of B.

Prerequisite: Have approved the concentration courses REEN 2010 and REEN 2110. Authorization of the director of the Department or Coordinator. .

RELI - Religion

RELI 2013 - Compared Religions (3)

Analysis of the current principal religions of the world,

taking into consideration their historical development, beliefs, practices and influence on the contemporary world.

Prerequisite: GECF 1010.

RELI 2020 - Introduction to the Bible (3)

Review of the history and the formation process of the Bible as a sacred text. Panoramic introduction to the literature of the Hebrew Bible, the New Testament and the deuterocanonical materials. Demonstration of some methods of Biblical exegesis.

Prerequisite: GECF 1010.

RELI 2023 - Biblical Archaeology and Geography (3)

Comparative study between the secular and religious perspective of the biblical world: emphasis on the geography, archaeology, culture and history of biblical events.

RELI 2030 - Phenomenology of Religion (3)

Analysis of the religious fact in its essence common to all religion from a phenomenological approach. Exploration of the symbolic, the sacred, the myth, the rite, the mystery, the revelation and other aspects related to the transcendent.

Prerequisite: GECF 1010.

RELI 2100 - Applied Bibliographic Research (1)

Introduction to bibliographic research techniques and methods applied to study of religion, theology and the Bible. Emphasis on the proper use of the Turabian and UNESCO systems.

Prerequisite: RELI 2020.

RELI 2103 - Biblical Study Methodology (2)

Biblical study as an operative foundation in the understanding of biblical texts. Introduction to the most outstanding exegesis and hermeneutic methods in contemporary times. It includes its main elements, construction rules and critical foundation.

RELI 2200 - Introduction to Practical Theology (3)

Discussion of the fundamentals and methodologies of practical theology and its various applications. Study of the relationship with the different ministries of the Church and their application of practical theology.

RELI 2230 - Preaching (3)

Application of the theory and practice of preaching. Emphasis on biblical preaching using creative methods of interpreting biblical texts. It includes practical experiences.

RELI 2240 - Ecclesiastical Administration (3)

Foundation of the ecclesiastical administration as a system and its interrelation with other dimensions of the ministry. Emphasis on the relationships between individuals and groups in the management process of planning, organizing and directing the ecclesial institution.

RELI 2250 - Introduction to Pastoral Care (3)

Analysis of the nature, methodology and functions of pastoral care practice in the various ministerial contexts. Study of the basic concepts of the sciences of human behavior and their integration into the biblical-theological principles of pastoral care. Introduction to the most commonly used intervention techniques in spiritual counseling and the ethical and legal responsibility of counseling.

RELI 2260 - Pastoral and Society (3)

Understanding the functions of the pastoral agent within a socio-religious context. Analysis of the relationship between church and society taking into account the role of the church with respect to social justice, environmental responsibility, human diversity, human rights, among other issues. Application of regulatory principles in the transformation of society.

RELI 2311 - History and Theology (3)

Analysis of the development of theological thought within its historical context. Includes the period from the Pauline letters to Saint Agustin.

Prerequisite: GECF 1010. Corequisite: RELI 2020.

RELI 2312 - History and Theology II (3)

Analysis of the development of theological thought within its historical context. Includes the period from the fall of the Western Roman Empire in the fifth century to the Protestant Reformation of the 16th century.

Prerequisite: RELI 2311.

RELI 397_ - Special Topics (3)

Discussion and analysis of topics of interest in the area of studies in religion, aimed to enrich the academic formation of the student.

Prerequisite: Authorization of the department's chair.

RELI 3011 - Old Testament I (3)

Historical-critical re4view of the Old Testament. Emphasis

on the religion of Ancient Israel, its institutions and prophets.

Prerequisite: RELI 2020.

RELI 3012 - Old Testament II (3)

Analysis of the books of the prophets and the writings of the Old Testament. It includes post-exilic, apocalyptic and deuterocanonical literature.

Prerequisite: RELI 3011.

RELI 3021 - New Testament I (3)

Historical-critical review and of the New Testament with emphasis on the Gospels and the letters of Saint Paul.

Prerequisite: RELI 2020.

RELI 3022 - New Testament II (3)

Study of the Acts of the Apostles, the Pauline letters, the Pauline school, the Catholic letters, Hebrews and Revelation. It includes the relationship of these texts in their historical, sociological, literary and pastoral context.

Prerequisite: RELI 3021.

RELI 3026 - History of Israel (3)

Study and analysis of the political, cultural and religious factors from the origins of history of Israel to the New Testament period in the context of Middle East history and its respective geographical circumstances.

Prerequisite: GECF 1010.

RELI 3034 - Spirituality (3)

Study and analysis of spiritual thought of different mystics from different Christian traditions. Presentation and praxis of diverse models that encourage spiritual growth through prayer, worship, contemplation and introspection.

Prerequisite: GECF 1010.

RELI 3065 - Christian Ethics (3)

Analysis of the theoretical bases of ethics in general. Exploration of the biblical and theological foundations for a Christian-ethic. Review of ths history of Christian ethical thinking in an ecumenical context.

Prerequisite: GECF 1010.

RELI 3220 - Religious Organizations (3)

Review of the diverse approaches and theological theories: the scientific social and the scientific cultural that analyze religious organizations and their interactions with the community and society. Application of approaches, theories, and analysis of data for administration and decision making.

Prerequisite: GECF 1010.

RELI 3313 - History and Theology III (3)

Analysis of the development of theological thought within its historical context. Includes the period from 16th century to the present.

Prerequisite: RELI 2312.

RELI 3326 - History of Christianity (3)

Events that have shaped Christianity; the heritage of contemporary Christianity.

Prerequisite: GECF 1010.

RELI 3337 - Religion in Latin America (3)

Discussion of the influence of religion in relation to political, economic, social and educational concerns in Latin America.

Prerequisite: RELI 2312.

RELI 4100 - Christian Education (3)

Synoptic study of the development of Christian education within the community of faith. Emphasis on the philosophy, objectives, history, organization and general characteristics of Christian education.

Prerequisite: GECF 1010.

RELI 4200 - Analysis of Religious Discourse and Liturgy (3)

Analysis of the religious discourse and its function in faith communities. Evaluation and critique of the structure, style and the symbolic, theological, sociopolitical and cultural content of liturgies, homilies (sermons) and other forms of the religious discourse. Construction of discursive forms that foment a communicative action as an act of universal solidarity.

Prerequisite: RELI 2020, 2311.

RELI 4300 - Christian Education Curriculum (3)

The principles, concepts and available resources for developing a curriculum by levels within the educational program of the church.

Prerequisite: GECF 1010.

RELI 4350 - Beginnings of Christian Thought (3)

Examination of Jewish and Hellenistic influences in the first centuries of the Church and their contribution to Christian thought.

RELI 4353 - Philosophy of Religion (3)

Critical examination of such religious concepts as God and proof of the existence of God, that which is holy, the problem of evil, miracles, the immortality of the soul, and an examination of the tension between faith and reason.

Prerequisite: GECF 1010.

RELI 4355 - Introduction to the Hermeneutics (3)

Discussion of the basic elements of biblical hermeneutics. Analysis of biblical texts using various methods, such as narrative, postcolonial and gender analysis.

RELI 4360 - Biblical Historiography (3)

Historiographic analysis in the discourse of the formation of the people of God in the Old and New Testaments.

Renewable Energy Technology wth Photovoltaic Systems

REPS 1000

REPS 1100 - Introduction to Renewable Energies (3)

Discussion of the different types of renewable energies. Emphasis on the history of electrical energy in Puerto Rico and the world, the laws, codes and regulations applicable to renewable energy in Puerto Rico, electric cars and the laws that apply to them. Ethics applied to renewable energies. It requires 30 hours of lecture and 30 hours of closed laboratory.

REPS 2000

REPS 2100 - Technical Drawing (3)

Introduction to computer aided drawing (CAD). Learn the necessary commands and adjustments to be able to draw plans of mechanical parts, cabinets, assembly drawings, isometric drawings, perspectives and sections. Discussion of the adjustments necessary to begin creating architectural pianos. It requires 45 hours of lecture-laboratory.

Prerequisite: REPS 1100.

REPS 2300 - Solar Energy System Components (3)

Analysis of the operation of the different components such as solar panels, rack system, charge controllers, inverters and batteries. Discussion of Grid Tie systems without batteries, Off-Grid Systems and Bimodal Systems, with their different components. Installation of a solar energy system. It requires 30 hours of lecture and 30 hours of closed laboratory.

Prerequisite: REPS 2100.

REPS 2400 - Design and Dimensionig of Solar Energy Systems (3)

Study of the methodology used to collect the necessary information during the field study and the requirements of the project. Analysis for the design of a photovoltaic system according to the particular needs in terms of energy consumption. Discussion of dimensioning aspects in the installation of a system considering the structural space. Challenge of a sketch that presents how the installation will be carried out. It requires 30 hours of lecture and 30 hours of closed laboratory.

Prerequisite: REPS 2300 and PHYS 3001.

REPS 2910 - Practice (2)

Practical experience in the renewable energy industry and use of existing products on the market. Requires 100 hours of hands-on industry experience.

Prerequisite: Have approved a minimum of 25 credits of the concentration.

RUSS - Russian

RUSS 1001 - Elementary Russian (4)

Essentials of Russian grammar with emphasis on the spoken language.

RUSS 1002 - Elementary Russian (4)

Essentials of Russian grammar with emphasis on the spoken language.

SBAD - Small Business Administration

SBAD 2110 - Introduction to Small Business Administration (3)

Administration and organization in relation to types of businesses, location and physical plant. Application of marketing, finance, accounting concepts, and government laws applying to the administration of small businesses.

SBAD 2210 - Relations with The Small Business Consumer (3)

Psychological and socio-cultural factors affecting the relations between clients and the development of a small business. Analysis of the relations between clients and the search of alternatives to satisfy their needs, and the influences that they may have in the decision-making process of the organization.

Prerequisite: MKTG 1210, SBAD 2110.

SBAD 3220 - Promotion and Selling Through Internet (3)

Design, development and implementation of promotional and sales material through the Internet. Search for information to help the management of small business in the decision-making process. Strategies and methods, which include the image of the business, target market, and consumer buying behavior. Analysis and selection of segmentation methods, planning design and promotional plan.

Prerequisite: MKTG 1210, SBAD 2110, GEIC 1010.

SBAD 3330 - Human Resources Administration in Small Businesses (3)

Techniques and Methodologies in the management of employees in small businesses. Includes roles of management and leadership styles, as well as interpersonal relations. Emphasis on techniques for planning, recruitment, selection, placement, training, and management of specific employee problems, with main emphasis on communication and motivation of employees. Includes orientation and training on benefits, as well as their assessment.

Prerequisite: BADM 1900.

SBAD 3335 - Federal and Puerto Rican Laws for Small Business Administration (3)

Basic Principles of laws and regulations applicable to small business administration. It includes the civil code of Puerto Rico, commercial code, annotated laws of Puerto Rico, federal laws, and regulations of the Small Business Administration agency.

Prerequisite: SBAD 2110.

SECU - Security

SECU 1100 - Security Fundamentals (3)

Study of the fundamental concepts of security. Discussion

of controls, methods of protection and governance in the safe and reliable operation of a security system.

SECU 2100 - Cybercrimes (3)

Study of the foundations of forensic investigation, cybercrimes and forensic methods. Discussion of tools, techniques and processes for the development of a forensic investigation. It requires 45 laboratory-conference hours.

SECU 3300 - Web Security and Wireless Networks (3)

Analysis of aspects of information security on the Web and in the wireless networks of an organization. Vulnerability exam, malicious activities, controls and policies to ensure security on the Web. It requires 45 laboratory-conference hours.

SECU 3400 - Security Systems Technology (3)

Application of technical and practical concepts in the installation, maintenance and repair of security systems in residences, organizations and companies. It requires 45 hours of laboratory-conference.

SECU 3500 - Policy and Administration of Security Technology (3)

Analysis of policies and governance in the administration of physical and virtual security systems in an organization. Application of research techniques related to new trends in security and information technology. It requires 45 hours of laboratory-conference.

SECU 4100 - Audit and Security (3)

Evaluation of the audit and control process for physical, occupational and virtual security in an organization with emphasis on legal and ethical aspects.

SECU 4200 - Disaster Recovery and Continuity (3)

Analysis of proactive approaches to information security with respect to the processes of resumption and continuity of operations, both internal and external.

SECU 4300 - Legal Aspects of Security (3)

Evaluation of legislation and ethical aspects related to the field of information technology and security to ensure physical security and information.

SECU 4400 - Social Engineering and Ethical Hacker (3)

Analysis of social engineering techniques and their application in the prevention of attacks, using the knowledge and tools of a malicious hacker, within the legal and ethical framework. It requires 45 laboratory-conference hours.

SECU 4500 - Integrative Seminar (3)

Integration of the knowledge obtained in the courses of the major. It requires the preparation and oral and written presentation of a work or project related to your study discipline.

Prerequisite: Have approved all the major courses.

SOCI - Sociology

SOCI 1030 - Introduction to Sociology (3)

Definition of the principles, fundamental concepts and facts related to the scientific study of society.

SOCI 2020 - Structures, Continuity and Change (3)

Identification of structures and social institutions and their manifestations through norms, sanctions and the social stratification. Study of the processes of continuity and social changes. Emphasis on collective behavior and the social movements.

SOCI 2040 - Family and Society (3)

Description of the family as a social institution in contemporary state and traditional, societies and their influence in the development of the individual's personality.

SOCI 2050 - Urban Society and its Transformation (3)

Identification of the metropolitan areas: social structures, recent changes, problems, institutions and potentialities.

SOCI 2060 - Violence and Criminal Conduct (3)

Description of the theories and main criminological schools and their applicability in the interpretation of the characteristics and causes of delinquency in Puerto Rico. Relation between the local and global violence and criminal conduct. Emphasis on drug trafficking, social inequality, the institutionalized values and the criminal policy. Includes review of criminology's auxiliary sciences, such as: penology, criminology and victimology.

SOCI 2070 - Civil Society and Self-Management (3)

Description of the theoretical perspective on civil society. Review of the implications of these perspective in the development of communitarian socio-economic strategies.

SOCI 2080 - Criminal Justice System (3)

Discussion of the criminal justice system in terms of its components: the police, the public ministry, the courts and the correctional institutions.

SOCI 2970 - Cultural Management and Ecotourism Workshop and Seminar (3)

Integration of historical, cultural and ecotouristic knowledge through workshops and field trips with experts in the areas of popular culture and interpretation of ecosystems of the region.

SOCI 3010 - Diversity and Marginality (3)

Analysis of the exclusion and inclusion processes of social groups from the point of view of ethnic differences and similarities and of gender, age, handicapped people and other points of view related to prejudices and the social tensions.

SOCI 3070 - Community and Socioeconomic Development (3)

Analysis of the strategies communities use for the development of the human and physical resources of a geographic zone. Identification of the planning initiatives that result in an increase of communitarian capital and the socioeconomic well-being of the community.

SOCI 3513 - Rural Society in Transition (3)

Analysis of the agrarian producing societies, the changes affecting rural life and the current programs for the development of rural society.

SOCI 3560 - Rehabilitation Systems for The Delinquent (3)

Analysis of the different systems of rehabilitation of delinquents and their application in the public and private institutions of the country and the social reaction that they generate.

SOCI 3570 - Nonprofit Organizations (3)

Analysis of pertinent aspects of the historical development of nonprofit communitarian organizations. Includes ideas, establishment of operations and contemporary challenges.

SOCI 3634 - Growth Areas (3)

Analysis of developing societies, the solutions and alternatives, product of the internal development and integration into global systems in Latin America, Asia and Africa.

SOCI 3645 - Studies of Population (3)

Introduction to the sociological analysis of human populations in qualitative, quantitative and statistical terms. Emphasis on the processes of demographic changes of the Puerto Rican population and the global population.

SOCI 3753 - Social Problems of Puerto Rico (3)

Analysis of social problems from the sociological perspective, their magnitude and the mechanisms used for their solution. Review of the contradictions and anomalies exhibited by contemporary Puerto Rican society. Integration of the alternatives related to viable economic development and the construction of a better quality of life.

SOCI 3900 - History of Social Thought (3)

Analysis of the history of social thought from antiquity, with emphasis on centuries XIX and XX, in Europe, Asia and the Americas.

SOCI 497_ - Seminar (3)

An integrating analysis of the ideas and main problems of the discipline through the study of variable topics or subjects.

Prerequisite: Have approved 9 credits of the major.

SOCI 4050 - Sociological Theories (3)

Analysis of the theoretical classic and modern approaches of sociology. Review of contemporary theories and postmodern trends.

SOCI 4060 - Criminology and Delinquency (3)

Review of the scientific aspects of current criminal research based on the use of technology as a tool. Review of the process of the criminal act through inspection of the scene and the application of techniques.

SOCI 4220 - Gender, Society and Culture (3)

Interdisciplinary study of various fields of knowledge from the perspective of the social construction of gender. The principle manifestations and representations of gender are analyzed in areas such as science, technology, education, religion, literature and the arts. Analysis of the integration of gender in the social discourse on sexuality, race, ethnic groups, old age and identity.

SOCI 4600 - Human Rights and Society (3)

Identification of the human social and civil rights of people and communities, in the local as well as in the international environment. Specific techniques oriented towards achieving solutions to the diverse problems of people and communities are reviewed. Integration of policies that improve the standards of life, especially of the very poor.

SOCI 4800 - Sociological Research (4)

Analysis and practice of methods and techniques of

sociological research. Includes the collection and interpretation of data as well as their ethical and political implications. Emphasis on the critical correlation among theories, methods and techniques in the research process.

Prerequisite: SOCI 1030 and SOCI 2020 or PSYC 3001.

SOCI 4817 - History of Social Welfare (3)

Review of programs and institutions designed to ameliorate the social ills from earliest times to the present; present-day methods in social work; U.S. Social Security program.

Prerequisite: SOCI 3485 and senior class status.

SOCI 4870 - Management of Communitarian Projects (3)

Review of the theories and planning models and implementation of social communitarian research projects. Exchange of experiences on management strategies and practices in projects and the use of tools that influence monitoring and evaluation.

SOCI 4910 - Internship (3)

Integration of concepts, ideas and attitudes by means of a supervised practical application experience in communitarian agencies, institutions and organizations where students will be placed in the Internship for a minimum of 75 hours in communitarian social development or in criminology. Includes, in addition, 15 hours of dialog and discussion in the classroom.

Prerequisite: Have approved 12 credits of the major and have an academic index of at least 2.50.

SONO - Medical Sonography

SONO 3000 - Basic Principles of Ultrasound (3)

Knowledge of the basic principles of ultrasound as a diagnosis modality. Includes the terminology and the advanced technology.

SONO 3005 - Anatomy and Pathophysiology MSK (3)

Study of the fundamental principles of anatomy and muscular skeletal physiology. The most common pathophysiological considerations are included.

SONO 3010 - Ultrasound Physics I (3)

Exposure to the basic concepts of ultrasonic physics and ultrasonic wave generation. Emphasis in the study of ultrasonic energy reflection methods, variation in sound beam patterns, interfaces with basic instrumentation

techniques. It includes the discussion of the basic types of equipment, the correction of the artifacts, the ALARA principle and the biological effects. Requires: 30 hours of lecture and 30 hours of closed laboratory.

SONO 3011 - Sonography MSK in the Upper Extremities (3)

Analysis of the techniques of tracking related to the criteria for the acquisition of ultrasound high resolution images applied to the muscular skeletal regions of the upper extremities.

Prerequisite: SONO 3010.

SONO 3012 - Sonography MSK in the Lower Extremities (3)

Analysis of the techniques of tracking related to the criteria for the acquisition of ultrasound high resolution images applied to the muscular skeletal regions of the lower extremities.

Prerequisite: SONO 3010.

SONO 3015 - Ultrasound Physics II (3)

Analysis of the concepts related to the operation and maintenance of sonographic equipment, cardiovascular instrumentation and the new digitized systems. Discussion of the Doppler effect and its applications, hemodynamics, color, color flow, M-mode and spectral. Study of the artifacts, their correction, the security measures and their quality guarantee. Evaluation and selection of images of optimum quality.

Prerequisite: SONO 3010.

SONO 3021 - Abdomen Sonography (3)

Demonstration of the clinical applications of ultrasound for the area of ??the abdomen and retroperitoneum. Emphasis on selection and adjustments, instrumentation, terminology, medical order, normal, variable and pa Requisites: SONO 3000 and 3010.

Prerequisite: SONO 3000 and 3010.

SONO 3022 - Pediatric and Adult Pelvic Sonography (3)

Illustration of the clinical ultrasound applications for the pediatric and adult pelvis. Emphasis on the evaluation parameters, the medical order, the anatomy, the variants, the congenital anomalies, the pathologies and the measures according to the age of the patient. Application of the Doppler technique, infection control, patient monitoring,

emergency management, assessment of clinical laboratories, complementary diagnostic imaging tests, patient education and compliance with ethical and legal aspects. Requires: 30 hours of lecture and 30 hours of closed laboratory.

Prerequisite: SONO 3010.

SONO 3024 - Obstetric Sonography (3)

Demonstration of clinical applications, preparation, guidance, instrumentation, technical factors, documentation and optimization of the image through the application of appropriate tracking techniques. Description of the visualization, documentation, anatomy, physiology, and pathology of the mother and the embryo during each trimester. Emphasis on fetal measurements, tracking standards, appearance and normal and abnormal embryological development. It includes high risk pregnancies, syndromes and fetal pathologies. Requires: 30 lecture hours and 30 hours of closed laboratory.

Prerequisite: SONO 3022.

SONO 4000 - Special Sonographic Studies (3)

Identification of normal anatomy, anatomical variables, anomalies and pathologies of salivary glands, thyroid, parathyroid, breast, neonatal neuro-sonography, pediatric hip, FAST and e-FAST. Use of instruments and sonographic applications. Requires: 30 hours of lecture and 30 hours of closed laboratory.

SONO 4010 - Skeletal Muscle Sonography (3)

Discussion of the clinical applications of ultrasound in the skeletal muscle system for the evaluation of tendons, the synovial membrane, the bursa, the ligaments and the nerves, the shoulder, the elbow, the wrist, the knee, the ankle and the pathologies of the infantile picture. It includes a laboratory section on basic tracking techniques and protocol. Requires: 30 hours of lecture and 30 hours of closed laboratory.

SONO 4045 - Cardiovascular Sonography (3)

Examination of the protocol and transthoracic ultrasound scanning techniques. Includes 2D, M-mode, Doppler and Color Flow applications. Emphasis on the sonographic appearance of congenital diseases of the heart, its valves and large blood vessels. Requires: 30 hours of lecture and 30 hours of closed laboratory.

SONO 4050 - Introduction to Echocardiography (3)

Recognition of embryology, its structure and cardiovascular function. Discussion of cardiac anatomy

and blood vessels, nervous control of the heart, cardiac cycle phases, electrical conduction, cardiac function tracings, cardiopulmonary resuscitation, elements of cardiovascular pharmacology and tracking. Requires: 30 hours of lecture and 30 hours of closed laboratory.

SONO 4055 - Cardiovascular Pathophysiology (3)

Description of the structure, function and pathologies of the vascular and cardiac anatomy of sonographic interest. Emphasis on the detection and analysis of cardiovascular disorders such as cardiomyopathies, and congenital defects, among others. Requires: 30 hours of lecture and 30 hours of closed laboratory.

Prerequisite: SONO 4045.

SONO 4065 - General Vascular Sonography (3)

Demonstration of arterial and venous anatomy, vascular image protocols, basic tracking techniques and transducer manipulation. Emphasis on the B-Mode Image, interpretation of color image and analysis of Doppler spectral waves. It includes the intracranial, extracranial area, the upper and lower extremities and the abdomen. Detection of cardiovascular disorders, vascular diseases and their effect on blood flow. Requires: 30 hours of lecture and 30 hours of closed laboratory.

SONO 4075 - Advanced Vascular Sonography (3)

Advanced study of the vascular anatomy and physiology. Discussion of the symptons of the vascular and arterial illness. Include techniques and protocols used in the diagnosis of vascular pathologies.

Prerequisite: SONO 4045, 4055, 4075.

SONO 4911 - Ultrasound Internship I (3)

Experience aimed at developing the skills and professional competences acquired in major courses for the performance of sonographic procedures in general. The student will be under the direct supervision of a professor in the simulation center. Requires: 30 hours of lectures and 45 hours of closed laboratory.

Prerequisite: SONO 3010.

SONO 4912 - Ultrasound Internship II (3)

Clinical experience aimed at developing and improving the professional skills acquired in the major and practice courses for performing sonographic procedures with emphasis on obstetrics, gynecology, pediatrics and cardiovascular. The student will be under the supervision of a qualified sonographer. It requires 180 hours of

practice.

Prerequisite: SONO 4911.

SONO 4913 - Ultrasound Internship III (3)

Clinical experience aimed at developing and improving the professional skills acquired in major and practice courses for performing sonographic procedures with emphasis on the skeletal muscular, cardiovascular system, and the superficial structures of the body. The student will be under the supervision of a qualified sonographer. It requires 180 hours of practice.

Prerequisite: SONO 4912.

SOWO - Social Work

SOWO 1503 - Introduction to Social Work (3)

Discussion of the purposes, values, ethics and historical perspectives of Social Work. Self-reflection on personal and professional values, as well as the interest and potential for the practice of the profession in the context of contemporary social reality. Description of the basic aspects of the Generalist Social Work model. The course is approved with a minimum grade of B. The student has up to a maximum of three (3) opportunities to pass the course.

SOWO 2461 - Individuals and their Social Environment I (3)

Study of human development and behavior through the general systems theory. Analysis of environmental forces, their implications for individuals, the analysis of society, culture, community, social organization and groups as human systems, and the implications for social work.

Prerequisite: SOWO 1503.

SOWO 2462 - Individuals and their Social Environment II (3)

Discussion of the concept of family as a social system taking into consideration the following aspects: definition, function, structure, diversity and theories that explain its behavior. Emphasis on the Ecological and Strengths Perspectives.

Prerequisite: SOWO 2461.

SOWO 3413 - Social Services and the Aged Person (3)

Aging process; identification of factors that influence the aging process; interrelationships between those factors and the evaluation of the aged; basic principles of social work as applied to the aged person; tendencies and institutions

providing service to the aged.

Prerequisite: SOWO 1503.

SOWO 3503 - Theories and Debates in the Social Context of the Profession (3)

Analysis of the sociological and psychological theories that explain the individual and collective social dynamics. Integration and analysis of these perspectives for their critical analysis in the debates and discussions on the social problems in which the profession of social work becomes involved.

Prerequisite: SOWO 1503.

SOWO 3505 - Introduction to Social Agencies Administration and Supervision (3)

Analysis of the roles of the generalist social worker in the administration and supervision of social agencies and their basic processes of planning, organization, coordination, direction and control. Discussion of general principles of the administration and supervision of social agencies and the role of the administrator in the transformation of social policies that promote social and economic justice. Evaluation of basic characteristics of current social agencies and how these are committed to cultural diversity.

Prerequisite: SOWO 2462 ans SOWO 3514.

SOWO 3514 - Social Policy and Services (3)

Study of the development of the social policies related to the social welfare system. Critical analysis of the social policies and their relation with social problems, the programs and the services offered.

Prerequisite: SOWO 3503.

SOWO 3566 - Women in Society (3)

Interdisciplinary studies to develop student knowledge of and sensitivity to the history, education, employment, sociology and psychology of women. Emphasis on sex roles, stereotyping and recent legislation regarding women's rights in family, education and employment.

SOWO 3801 - Communication and Interview Process (3)

Analysis of the conceptual structure of communication and the intra and interpersonal skills for conducting the interview. Study of the nature, elements, types and characteristics of the interview, as well as of its relation to human diversity, the values, ethics and purposes of the profession. Integration of the theoretical knowledge of communication and the interview to the models of intervention used in Generalist Social Work.

Prerequisite: SOWO 2462.

SOWO 3802 - Files and Report Writing (3)

Study of the concepts related to the writing of case histories used in different social welfare agencies and programs. Analysis of social files for individuals, groups and communities. Discussion of ethical and legal aspects of file management.

Prerequisite: SOWO 3801.

SOWO 3849 - Child and Family Welfare Services (3)

Analysis of intra-family relationships and their impact on the integral development of children and adolescents. Introduction to the nature, processes, practices, and policies relating to child and family welfare services. Emphasis on the service delivery system in areas of protection, mental health, supplementary supports such as housekeepers and services such as foster homes, and the adoption process.

SOWO 4100 - Coping with Loss and Death (3)

Exploration of theories, approaches and practices related to the management of losses, pain, death, and mourning. Study of the stages in the process of death and the strategies of intervention considering the cultural aspect.

SOWO 4873 - Social Research Methodology (4)

Analysis of the relation of the social research process and the professional practice of social work. Study of the qualitative and quantitative approaches for understanding the social phenomena that affect the diverse human systems. Emphasis on research as an instrument to promote an effective professional practice.

Prerequisite: PSYC 3001 or an equivalent Basic Statistics course.

SOWO 4911 - Practice Experiences in Generalist Social Work I (4)

Application of the knowledge, skills and principles of professional ethics of the generalist social worker in a community agency. Emphasis on the work with individuals and families, groups and communities. A minimum of 200 hours of practice is required during the academic term under the supervision of a specialist. The course may not be substituted by work or life experience.

Prerequisite: SOWO 3802, 4932.

SOWO 4912 - Practice Experiences in Generalist Social Work II (4)

Application, at a deeper level, of the knowledge, skills and principles of professional ethics of the generalist social worker in a community social agency. Emphasis on experience with the organization and the research area are included. A minimum of 200 hours of practice under the supervision of a specialist in the Social Work area is required. The course may not be substituted by work or life experience.

Prerequisite: SOWO 4911.

SOWO 4931 - Generalist Social Work with Individuals and Families (3)

Study of the phases of the generalist model and its methods, techniques and skills in social work practice. Application of the generalist model with individuals and families.

Prerequisite: SOWO 2462, 3801.

SOWO 4932 - Generalist Social Work with Groups (3)

Study of the conceptual and theoretical frames and application of the intervention methods from the generalist perspective of social work with groups.

Prerequisite: SOWO 3801. Corequisite: SOWO 4931.

SOWO 4933 - Generalist Social Work with The Community (3)

Application of skills, knowledge and values in communitarian social work with a generalist perspective in the social work profession. Discussion and application of conceptual and theoretical frames that permit communitarian social intervention in Puerto Rico. Analysis of communitarian social work models, their main stages of development, strategies and techniques.

Prerequisite: SOWO 3802, 4873, 4931, 4932.

SOWO 4951 - Seminar in Education Practice I (3)

Self reflexive examination of the personal and professional learning experiences in the practice. Development of critical thinking skills, their relation to the theories and practice of Social Work and the current social policies. Analysis of ethical and diversity matters related to the profession, which may be linked to students' interventions in their practice centers.

Prerequisite: SOWO 3802, 4873, 4931, 4932. Corequisite: SOWO 4911.

SOWO 4952 - Seminar in Education Practice II (3)

Analysis of the learning experiences that integrate critical thinking skills and their relation to the theories and practice of social work, social intervention based on the current research and social policies. Discussion of controversial and ethical matters in social work practice. Analysis of professional and personal learning as a continuum throughout life. Exchange of experiences and integration of conceptual and operational aspects in the diverse practice scenarios.

Prerequisite: SOWO 4951, 4911. Corequisite: SOWO 4912.

SOWO 497_ - Seminar (3)

Seminar in Social Work related topics

SOWO 4971 - Seminar in Social Gerontology (3)

Discussion of the concepts and the fundamental principles of gerontology and its application during the intervention with the elderly adult. Analysis of the conditions of marginalization and discrimination to which elderly adults are exposed. Study of the social policies and how they guarantee social justice for this population.

SPAN - Spanish

SPAN 1105 - Literature and Communication (6)

Reading and discussion of narrative, essayistic, poetic and dramatic works from Spanish, Latin American and Puerto Rican literatures for the development of analytical and communication skills, especially written. Systematic practice of the different types of elocution. Requires additional hours of virtual open lab.

SPAN 2510 - Introduction to Text Analysis (3)

Study of the basic techniques in text analysis: theme and plot identification, points of view, styles and prosody. Introduction to literary genres through practice in the analysis of representative works.

Prerequisite: GESP 1102.

SPAN 2541 - Advanced Grammar I (3)

Discussion of the phonological, morphosyntactical and semantic systems of the Spanish language. Emphasis on the theoretical explanation and construction of the morphosyntactic structures of the simple sentence.

SPAN 2542 - Advanced Grammar II (3)

Systematic discussion of the morphosyntactic and semantic

aspects of complex sentence structures. Emphasis on the theoretical explanation and the construction of complex morphosyntactic structures.

SPAN 397_ - Special Topics (3)

Study of important topics in the area of linguistic or literature.

Prerequisite: Authorization of the department's chair.

SPAN 3000 - Linguistics (3)

Analysis of the fundamental concepts of current linguistics in the phonological, lexical semantic and morphosyntactical aspects and their application to the teaching of the Spanish of Puerto Rico.

SPAN 3011 - Spanish Linguistics I (3)

Study of the formative and evolutionary process of the Spanish language from its beginnings to the present: phonology and lexicology.

SPAN 3012 - Spanish Linguistics II (3)

Study of the formative and evolutionary process of the Spanish language from its beginnings to the present: morphology and syntax.

Prerequisite: SPAN 3011.

SPAN 3015 - Oral Communication (3)

Acquisition and practice of the necessary skills for oral expression through the discussion of different topics and the development of ability in oral comprehension. Presentation and preparation of argumentative and expository speeches.

Prerequisite: GESP 2203 with a minimum grade of C.

SPAN 3020 - Writing Workshop (3)

Analysis and application of the writing process leading to expository and argumentative text production. Emphasis on the application of research techniques in the development of formal written expression.

Prerequisite: GESP 2203 with a minimum grade of C.

SPAN 3021 - Spanish Literature I (3)

Study of the authors and main movements of Spanish literature from its beginnings to the Golden Age. Analysis of the most representative works of this period.

SPAN 3022 - Spanish Literature II (3)

Study of the authors and main movements of Spanish literature from the eighteenth century to the present. Analysis of the most representative works of this period.

SPAN 3025 - Writing of Professional Documents (3)

Development of professional writing skills. Emphasis on research techniques, resumes, reports, and lectures. Computer use in writing.

Prerequisite: GESP 2203 with a minimum grade of C.

SPAN 3071 - Spanish-American Literature I (3)

Study of the authors and main movements of Spanish-American literature from the pre-Columbian period to realism-naturalism. Analysis of the most representative works of these periods. Development of oral and written communication skills through analysis of the works studied.

SPAN 3072 - Spanish-American Literature II (3)

Study of the authors and main movements of Spanish-American literature from modernism to the present. Analysis of the most representative works of these periods. Development of oral and written communication skills through analysis of the works studied.

SPAN 3211 - Puerto Rican Literature I (3)

Study of the authors and main movements of Puerto Rican literature from chronicles to realism. Analysis of the most representative works of these periods. Development of oral and written communication skills through analysis of the works studied.

SPAN 3212 - Puerto Rican Literature II (3)

Study of the authors and main movements of Puerto Rican literature from modernism to the present time. Analysis of the most representative works of these periods. Development of oral and written communication skills through analysis of the works studied.

SPAN 4010 - Reading Workshop (3)

Analysis and practice of the reading process for strengthening and refining the understanding and text interpretation skills. Emphasis on the practice of techniques for the development of critical reading.

SPAN 4015 - Translation Workshop (3)

Development of the basic skills for translation from English to Spanish. Use of translated texts to improve communication in Spanish.

Prerequisite: GESP 2203 with a minimum grade of C.

SPAN 4110 - Literature of The Golden Age: Renaissance (3)

Study of the Spanish Renaissance and its most representative authors in its historical-cultural context. Analysis of the main works of this period.

SPAN 4125 - Representative Works of Spanish Dramatic Art (3)

Analysis of main representative works of the different Spanish theatrical movements beginning with the Golden Age.

SPAN 4170 - Spanish-American Literature of the Nineteenth Century (3)

Study of the historical-cultural background of the most representative literary movements of the nineteenth century in Spanish-America: romanticism, realism-naturalism and modernism. Analysis of representative works of each movement.

SPAN 4175 - Contemporary Spanish-American Literature: Narrative and Theater (3)

Study of the development of the narrative and theater in Spanish-America, through its main authors, during the twentieth and twenty first centuries. Analysis of the most representative works in both genres.

SPAN 4185 - Spanish-American Dialectology (3)

Analysis of the contemporary trends in the Spanish-American dialectology: phonology, morph syntax, lexicon and influence of other languages.

SPAN 4196 - The Language of Puerto Rico (3)

Analysis of the Spanish spoken in Puerto Rico: phonology, morph syntax, lexicon, influence of English and the other languages.

SPAN 4200 - Spanish Literature of the Nineteenth Century (3)

Study of the historical-cultural background of the literary movements of the nineteenth century in Spain: romanticism and realism. Analysis of representative works of each movement.

SPAN 4275 - Contemporary Spanish-American Literature: Poetry and Essay (3)

Study of the development of poetry and essay in Spanish-America, through its main authors, during the twentieth and twenty first centuries. Analysis of the most representative works in both genres.

SPAN 4285 - Contemporary Narrative of the Hispanic Caribbean (3)

Analysis of contemporary narrative texts written in Spanish beginning in 1970 from a redefinition of the Caribbean that includes the archipelago as well as its continental centers.

SPAN 4300 - Span 4300 Puerto-Rican Literature of the Nineteenth Century (3)

Study of the historical-cultural background of the nineteenth century literary movements in Puerto Rico. Analysis of the most representative works and authors of each movement.

SPAN 4350 - Contemporary Puerto Rican Literature: Narrative and Theater (3)

Study of the development of Puerto Rican narrative and theater during the twentieth and twenty first centuries. Analysis of the most representative works in both genres.

SPAN 4375 - Contemporary Puerto Rican Literature: Poetry and Essay (3)

Study of the development of Puerto Rican poetry and essay during the twentieth and twenty first centuries, through its main authors. Analysis of the most representative works in both genres.

SPTH - Speech and Language Therapy

SPTH 1010 - Anatomy and Physiology of Speech and Language (3)

Introduction to the mechanisms of the human body related to the processes of auditory reception, essential understanding and voice production, language and verbalization. Emphasis on the respiratory, neurological and muscular systems, and on the organs that create speech: language, hearing, phonation and verbalization.

SPTH 1011 - Normal Development of Language (3)

Study of the normal development of language in children from childhood to adolescence. Includes the necessary mental Prerequisites for language. Review of the different theories of language development and the study of its components. Analysis of the relevance and relationship of normal language development to the acquisition of academic skills and learning. Requires experience in the observation of children in natural environments.

SPTH 1122 - Introduction to Audiology (3)

Discussion of acoustics and the psychoacoustic human processes. Emphasis on the review of the different types and degrees of auditory loss as well as its effect in linguistic development and academic learning. Includes practical experience in the administration of auditory evaluations of children and adolescents.

SPTH 1123 - Ethical and Legal Matters and Clinical Procedures (3)

Discussion of the main functions that speech and language therapists perform as established t in the law that regulates the practice of professionals of Speech and Language Therapy, Speech Pathology, and Language and Audiology in Puerto Rico. Emphasis on the ethical principles that govern the profession. Description of the roles and administrative functions in the practice of speech and language therapists. Includes skills of observation and general measures of security and introduction to the processes of clinical documentation in the discipline.

SPTH 1124 - Fluency Disorders in Children (3)

Identification of fluency disorders in children and adolescents. Includes the review of different theories on fluency disorders, as well as their characteristics. Presentation of intervention strategies for correction and dealing with such disorders. Includes observations in therapeutic interventions with children with fluency disorders.

Prerequisite: SPTH 1011.

SPTH 2010 - Disorders of Articulation and Phonology (3)

Study of normal and pathological phonetic development in children. Emphasis on the functions of the oral mechanism in the production of phonemes and the linguistic aspects that influence in the phonological processes. Discussion of the most common therapeutic approaches used in intervention with children and adolescents. Includes observation experiences and evaluation of verbalization practices of children.

Prerequisite: SPTH 1010, 1011.

SPTH 2015 - Voice Disorders in Children (3)

Discussion of voice disorders in children and adolescents with emphasis on evaluation and treatment of such disorders. Observation of children and adolescents with auditory loss is required.

Prerequisite: SPTH 1010, 1011, 1122.

SPTH 2024 - Use of Technology in The Practice of Speech and Language Therapy (3)

Use of computer application programs and their use in the administrative and clinical tasks that speech and language therapists perform. Includes the review of commercial computer programs and their adaptation to the particular needs of clients or patients.

SPTH 2110 - Cleft Palate and Craniofacial Anomalies (3)

Analysis of the communication disorders associated with cleft palate and other craniofacial anomalies. Discussion of the different approaches to therapeutic intervention in speech and language with children and adolescents with such diagnoses. Emphasis on the procedures of communication evaluation in infants, pre-school and school age children. Requires observations of therapy of a child with this diagnosis.

Prerequisite: SPTH 2010, 2015.

SPTH 2120 - Intervention with Children with Hearing Impairments (3)

Discussion and analysis of intervention strategies and clinical procedures used in speech and language therapy with children and adolescents with auditory loss. Includes observations in speech and language therapy sessions of children and adolescents with auditory loss.

Prerequisite: SPTH 1010, 1122.

SPTH 2130 - Cognitive and Psycho-Social Conditions Associated with Speech and Language Problems (3)

Study of communication disorders associated with intellectual disability, learning problems, deficit of attention, selective muteness, sociocultural deficiency, autism and bilingualism. Discussion of therapeutic methods of intervention in speech and language with children and adolescents with such diagnoses. Observations of a speech therapy session with a child with one of the conditions studied in the course are required.

Prerequisite: SPTH 1011.

SPTH 3020 - Identification and Treatment of Children with Oral Language Disorders (3)

Analysis of understanding and production problems of oral language in children. Intervention strategies with children with oral language disorders are reviewed. Includes observations of therapeutic interventions with children with oral language disorders.

Prerequisite: SPTH 2021.

SPTH 3021 - Identification and Treatment of Children with Written Language Disorders (3)

Analysis of the problems of understanding and formulation of written language in children. Review of the most common intervention strategies used with children with written language disorders. Observations in therapeutic interventions with children with written language disorders are required.

Prerequisite: SPTH 2021.

SPTH 3022 - Clinical Documentation in the Profession of Speech and Language Therapy (3)

Application of the skills of oral and written communication data collection. Knowledge of terms and abbreviations related to the field of health and the techniques of clinical documentation related to the profession of Speech and Language Therapy.

Prerequisite: SPTH 1123, 1124, 2010, 2015 .

SPTH 3140 - Early Intervention (3)

Analysis of communication development during the first two years of life. Emphasis on the indicators of communication delay in infants and the strategies of stimulation and early intervention with this population. Observations and evaluation of infants in care centers are required.

Prerequisite: SPTH 2021.

SPTH 3141 - Therapeutic Interventions for Children with Speech and Language Problems (3)

Discussion of methods and strategies for therapeutic interventions and their application to the diverse conditions that affect speech and language. Includes the design and adaptation of materials for therapeutic purposes. Requires 30 hours of lecture and 30 hours of closed laboratory.

Prerequisite: SPTH 1124, 2015, 3020, 3021.

SPTH 3142 - Sign Language (3)

Study of sign language. Theoretical and practical analysis of this. Emphasis on manual communication systems, on the techniques of nonverbal communication, on the American Sign Language (ASL) and the recognition of non verbalized expression by means of sign language.

SPTH 3143 - Dysphagia in Children (2)

Analysis of the aspects related to intervention with

children with feeding and swallowed disorders. Discussion of the phases in the feeding process, swallowing problem indicators and the recommended exercises to work with the problems in the oral phases.

Prerequisite: SPTH 1010.

SPTH 3210 - Augmentative and Alternative Aids for Communication in Children (3)

Discussion of the benefits of alternate and augmentative aid that facilitate communications in children and adolescents with disorders. Emphasis on adaptation, the design of equipment and the technological assistance materials that will be used with children and adolescents with communication disorders. Observations and use of different technologies are required.

SPTH 4141 - Integratated Seminar I (2)

Analysis of the current situations and trends in health services that affect the discipline of speech and language therapy and the role of the speech and language therapist. Description of the changes that the speech and language therapist faces daily in the diverse scenes of clinical practice. Integration of ethical and legal principles and the results of research in the discussion of controversies related to the practice of the speech and language therapist.

Corequisite: SPTH 4914.

SPTH 4142 - Integratated Seminar II (2)

Integration and analysis of the ethical and legal principles and the results of research in the discussion of controversies related to clinical practice. Analysis of the studies of cases related to practice experiences.

Corequisite: SPTH 4915.

SPTH 4914 - Practicum I (1)

Practical experience designed on the application of evaluation skills and treatment of children and adolescents with speech and language disorders. Requires forty-five (45) hours of supervised practice in a clinical scenario, the approval of the course with a minimum grade of B and compliance with all Prerequisites established in the Practice Manual.

Prerequisite: SPTH 1123, 2120, 2130, 3020, 3021, 3022, 3140, 3141. Corequisite: SPTH 4141.

SPTH 4915 - Practicum II (2)

Practical experience designed on the application of the skills acquired in Practicum I. Requires 90 hours of

supervised practice, the approval of the course with a minimum grade of B and compliance with all the Prerequisites established in the Practice Manual.

Prerequisite: SPTH 4914. Corequisite: SPTH 4142.

SRIM - Recreational and Sports Facilities Management

SRIM 1020 - Foundations of Sports and Recreation (3)

Study of the philosophical, historical and social foundations of sports and recreation. Emphasis on the contribution of sports and recreation to the individual and society.

SRIM 2300 - Introduction to Sports Marketing (3)

Introductory study of the total system of integrated marketing and its application to the sports industry. Study of the variables controlled by the company, product, price, promotion and distribution. In addition, consumer behavior, information systems, segmentation, selection of market goals, and the external and internal factors that affect marketing decisions will be studied.

SRIM 3030 - Development of Programming of Sport And Recreational Centers (3)

Development of programming and philosophy of a sports center (goals, objectives, programming, evaluation, needs studies and others) taking into consideration all related aspects.

STAT - Statistics

STAT 1201 - Statistics I (3)

Study of descriptive statistics and the basic concepts of probability theory applied to situations related to the different disciplines. Use of frequency distribution to create tables and graphs. Study of the measures of central tendency, position and dispersion for grouped and ungrouped data. Study of the normal probability distribution. Emphasis on the characteristics of the normal probability curve and its various applications to solve problems. Use of calculators and statistical application programs.

Prerequisite: GEMA 1000 or GEMA 1200.

STAT 1202 - Statistics II (3)

Study of statistical inference, with emphasis on the confidence and validity interval. Application of the hypothesis test for validation and decision making.

Correlation and regression analysis. Use of calculators and statistical application programs.

Prerequisite: STAT 1201.

THEA - Theater

THEA 2001 - Theater Workshop (2)

Designed to familiarize students with theatrical techniques and scenery; emphasis on acting, and managing all aspects of a stage production. Students will be required to audition before officially registering in the course. A maximum of eight credits can be completed in this elective. Each semester the students will receive a grade of P or NP.

THEA 1001 - Theater Workshop (2)

Designed to familiarize students with theatrical techniques and scenery; emphasis on acting, and managing all aspects of a stage production. Students will be required to audition before officially registering in the course. A maximum of eight credits can be completed in this elective. Each semester the students will receive a grade of P or NP.

THEA 1002 - Theater Workshop (2)

Designed to familiarize students with theatrical techniques and scenery; emphasis on acting, and managing all aspects of a stage production. Students will be required to audition before officially registering in the course. A maximum of eight credits can be completed in this elective. Each semester the students will receive a grade of P or NP.

THEA 1500 - Acting (3)

Application of suitable acting techniques that permit the extemporization of a character, internally as well as externally. Use of tools to analyze a character beginning with the dramatic text, including its visualization in a scene. Basic techniques for mastery of the body, voice and space.

THEA 1700 - Appreciation of The Theater (3)

Study of the foundations of the scenic arts and their incorporation in society. Integration of the elements for analysis of the scenic arts, which permits the development of their analysis and appraisal. Theoretical review of the landmarks of theatrical productions from their origins to the present.

THEA 2002 - Theater Workshop (2)

Designed to familiarize students with theatrical techniques and scenery; emphasis on acting, and managing all aspects of a stage production. Students will be required to audition

before officially registering in the course. A maximum of eight credits can be completed in this elective. Each semester the students will receive a grade of P or NP.

THEA 3001 - Theater Workshop (2)

Designed to familiarize students with theatrical techniques and scenery; emphasis on acting, and managing all aspects of a stage production. Students will be required to audition before officially registering in the course. A maximum of eight credits can be completed in this elective. Each semester the students will receive a grade of P or NP.

THEA 3002 - Theater Workshop (2)

Designed to familiarize students with theatrical techniques and scenery; emphasis on acting, and managing all aspects of a stage production. Students will be required to audition before officially registering in the course. A maximum of eight credits can be completed in this elective. Each semester the students will receive a grade of P or NP.

THEA 3505 - Puerto Rican Theater (3)

Study of the Puerto Rican theater production. Review of some representative texts of the Puerto Rican dramatic art and how these have been made into a theatrical production.

THEA 4001 - Theater Workshop (2)

Designed to familiarize students with theatrical techniques and scenery; emphasis on acting, and managing all aspects of a stage production. Students will be required to audition before officially registering in the course. A maximum of eight credits can be completed in this elective. Each semester the students will receive a grade of P or NP.

THEA 4002 - Theater Workshop (2)

Designed to familiarize students with theatrical techniques and scenery; emphasis on acting, and managing all aspects of a stage production. Students will be required to audition before officially registering in the course. A maximum of eight credits can be completed in this elective. Each semester the students will receive a grade of P or NP.

THEA 4013 - Stage Direction and Theatrical Staging (3)

Direction and acting in the theatrical scenario as a research laboratory aimed to delineate, construct, experience and scrutinize the position of the director from the fundamental areas of a theatrical montage and the use of scenic languages.

THEA 4500 - Stagecraft (3)

Global study of technical areas in theater: scene, costume and lighting design. Models and drawing projects required. Requires 30 hours of lecture and 30 hours of lab.

Prerequisite: ARTS 1102.

THEA 2500 - Puppet Theater (3)

Selection, adaptation and preparation of a script for a puppet theater production. Application of basic construction techniques and utilization of disposable materials for puppet production.

TOXI - Toxicology

TOXI 1101 - Biological Foundations of Toxicology I (3)

Study of the basic principles of biochemistry, cell biology and ecosystems necessary for the understanding of the fundamental mechanisms of life. Emphasis on the effect of toxic substances on organisms and ecosystems. Focus on the study of cells, their structures and the cell cycle. Discussion of the ecological principles of biotic and abiotic factors, ecological levels and energy flow.

TOXI 1102 - Methods in Toxicology I (1)

Development of knowledge and basic skills applied to the study of toxicology. Study of macromolecules, microscopy, spectrophotometry, microbial culture, aseptic techniques and toxicological analysis in organisms. Application of the scientific method for the development of laboratory exercises, the analysis of results and scientific dissemination. It requires 45 hours of face-to-face closed laboratory.

Corequisite: TOXI 1101.

TOXI 1120 - Biological Foundations of Toxicology II (3)

Study of the basic concepts of human anatomy and physiology with an emphasis on the effect of toxic substances on the body. Discussion of the functioning of the respiratory, cardiovascular, excretory, digestive, nervous, endocrine, muscular, skeletal, integumentary, reproductive and lymphatic systems. The effects of nutrition and environmental factors on metabolism are highlighted.

Prerequisite: TOXI 1101.

TOXI 2210 - Introduction to Toxicology (3)

Introduction to the study of the action of toxic substances and their effects on organisms and ecosystems. Emphasis on the mechanisms of toxicity, absorption and distribution. Effects on target cells, excretion and biotransformation of

toxic substances in organisms. Introduction to the topics of environmental toxicology and ecological risk analysis.

Prerequisite: TOXI 1120 and CHEM 1111.

TOXI 2220 - Methods in Toxicology II (1)

Application of laboratory techniques for the qualitative and quantitative analysis of the effects of toxic substances on living organisms and ecosystems. Use of molecular and chemical techniques to identify and study toxics in environmental samples. Use of the scientific format in the writing of laboratory reports. It requires 45 hours of face-to-face closed laboratory.

Prerequisite: TOXI 1102. Corequisite: TOXI 2210.

TOXI 2230 - Introduction to Pharmacology (3)

Study of the basic concepts of pharmacology and the development of therapeutic agents and their effects on humans. Focus on the topics of pharmacokinetics, pharmacodynamics, classification of therapeutic agents, drug development, determination of doses and the laws that regulate them. Discussion of the topics of pharmaceutical biotechnology: gene therapy, DNA vaccines and the application of bioinformatics in the development of personalized medicines.

Prerequisite: TOXI 2210.

TOXI 3000 - Genetic Toxicology (3)

Study of the interaction of xenobiotic agents with the genetic material, their damages and the consequences. Description of the mechanisms of expression, gene regulation and the induction of cellular responses to damage, as well as the metabolism of such substances. Emphasis on the causes and effects of mutagenic events, such as teratogenesis and cancer.

Prerequisite: TOXI 2210.

TOXI 3010 - Clinical Toxicology (3)

Analysis of the mechanisms of action and the effect of toxic substances in the human body. Study of the theoretical foundations of the interactions of chemical substances in the body, the toxic-pathological effects and the neoplastic processes in the organs.

Prerequisite: TOXI 3000.

TOXI 3603 - Environmental Toxicology and Risk Assessment (3)

Study of the damage caused to organisms by toxic substances in the environment. Focus on the relationship between environmental, public health and occupational safety risks. Discussion of the main environmental pollutants, their fate in the ecosystem and their toxicity mechanisms. Study of the basic steps of risk assessment: hazard identification, dose response assessment, exposure assessment and risk characterization. Introduction to the risk communication process, the development of public policies and decision-making to safeguard public health and the ecosystem.

Prerequisite: TOXI 2210 and CHEM 2212.

TOXI 3605 - Public Health for Toxicologists (3)

Study of health, diseases in the population, healthy lifestyles and well-being of the population. Discussion of public health aspects related to prevention, government responsibilities, the principles of epidemiology, environmental health, and social determinants of health. Emphasis on aspects of toxicology that influence public health.

Prerequisite: TOXI 2210 y MATH 2100.

TOXI 4750 - Molecular Toxicology (3)

Study of the biochemical and molecular pathways that are altered by exposure to chemical, therapeutic and environmental agents. Emphasis on the methods and models to determine the effect of such substances on biological systems at the molecular level. It includes the mechanisms of toxicity, absorption, distribution, metabolism and excretion of such compounds.

Prerequisite: TOXI 3010. Corequisite: CHEM 4220.

TOXI 4751 - Methods in Toxicology III (1)

Application of chemical, molecular and tissue culture techniques in the study of the effects of toxic substances. It includes the application of biochemical, ecological and epidemiological techniques used to solve toxicological problems. Use of the scientific format in the development of experiments, analysis of results and writing of reports. It requires 45 hours of face-to-face closed laboratory.

Prerequisite: TOXI 2220. Corequisite: TOXI 4750.

TOXI 4910 - Practice (2)

Supervised work practice in industries, research laboratories, government agencies, hospitals or other companies related to the different areas offered in toxicology. It requires completing a minimum of 120 hours and participating in periodic meetings with the course coordinator.

Prerequisite: TOXI 2230, TOXI 3603, TOXI 4751 and authorization from the department's chair.

TURI - Tourism

TURI 1020 - Fundamentals of Tourism (3)

Basic concepts and general areas in tourism as one of the important components of a country's development. The importance of tourism to the local and world economy. The characteristics of Puerto Rico for development of this industry. The socioeconomic impact of tourism.

TURI 1039 - Communication Skills and Interpretation Techniques (3)

Development of communication skills and the techniques for explaining the national heritage. Discussion of the importance of the process of sensitizing students so that they assume their role as ambassador of the country they represent, in order to meet the needs and expectations of the visitor.

TURI 1050 - Tourism Guide (3)

Study of the functions and responsibilities of the different types of guides. Review of the Prerequisites to practice the profession. Handling maps for designing and reading routes. Professional ethics and psychological factors that affect groups.

TURI 1200 - Tourist Quality and Services (3)

Development of the skills necessary to achieve client satisfaction in all areas of quality of service and to obtain the mutual benefits of tourism to the company, the residents and the visitors. Analysis of the challenges that the tourism industry has to anticipate the needs of the visitors and exceeding their expectations with good quality services to stay competitive.

TURI 1201 - Natural Resources Interpretive Guide (3)

Study of the skills and techniques to interpret the natural resources. Discussion of the governmental policies and regulations that govern the natural areas. Development of the knowledge of good practices for natural areas. Requires field trips.

TURI 1900 - Hotel and Accommodation Management (3)

Discussion of the concepts and processes related to the hospitality industry and accommodation management. Analysis of managerial skills to plan, manage, and implement the operation of a hotel. Emphasis on the operation of the accommodation department.

Prerequisite: TURI 1020, ACCT 1161 and BADM 1900.

TURI 2000 - Tourism Legislation (3)

The most important laws and regulations in the tourism field in Puerto Rico. Knowledge of the legal organization of tourism in the country. Laws and regulations in the federal jurisdiction of the United States applicable to Puerto Rico and international organism regulations that in some way influence tourism.

Prerequisite: TURI 1020 or HRMT 1200.

TURI 2010 - Reception Department (2)

Systematic focus on procedures in a hotel reception office. Includes the complete process from reservations to checkout and billing. Review of management elements to achieve effectiveness, planning and evaluating performance and human resources within a general operational context of a hotel.

TURI 2021 - Tourism Geography of the Caribbean (3)

Study of Caribbean geography to promote the region as a touristic area. Analysis on the role that Puerto Rico has as a touristic area in the Caribbean.

TURI 2040 - Designing and Planning of Tourism Excursions (3)

Study of the characteristics and methods for the effective planning of tours. Evaluation of the touristic areas, excursion preparation, setting prices, schedule preparation and reservations. Analysis of the relation between the tourist, the excursion wholesalers, the travel agencies, lodging, transportation services, and excursions companies.

TURI 2060 - Tourist Marketing (3)

Review of the concepts and application of marketing, principles and strategies directed towards tourism and hotel services. Analysis of the principles of traveler conduct, market study, prices, promotion, distribution and services.

TURI 2200 - Culture and Tourist Destinations of Puerto Rico (3)

Study of the main tourist destinations of Puerto Rico, with emphasis on their culture, activities, history and tourist development. Study of touristic attractions, as well as the social behavior that makes these destinations prosperous. Those destinations that by tradition have not been developed, but which have the potential of tourism development will be discussed.

TURI 2201 - Tourism Adventure Guide (3)

Description of the different areas in which adventure tourism is practiced. Development of the basic skills for the practice of these activities. Discussion of the responsibilities of the tour guide, the insurance policies and related procedures.

Prerequisite: TURI 1201.

TURI 2400 - Housekeeping Management (3)

Systematic focus and management of room operations in a hotel and its public areas. The different operation areas, management of inventory, control of costs and management of human resources.

Prerequisite: BADM 2250.

TURI 2600 - Physical Facilities Management (3)

Principles and basic concepts for management of buildings and land in hotels and restaurants to effectively work with engineering and maintenance departments. Structural aspects, services, waste reduction and cost control.

TURI 2913 - Practice in Tour Guide (3)

Study of the learning experiences for the specialization in Tour Guide in a center approved by the faculty for practice in the theories, concepts and acquired skills. Requires a total of one hundred sixty-five (165) hours under the supervision of a professor.

Prerequisite: Have approved all the major courses and authorization from the department's chair.

TURI 3000 - Tourism Planning (3)

Integrated study of planning, emphasizing basic system concepts, decision-making, resource analysis techniques, tourism programs and services including the preparation of plans. Analysis of the functions of the planning process applied to the field of tourism.

TURI 3010 - Ecotourism and Sustainable Tourism (3)

Analysis of the importance of the good management of the environmental, economic and sociocultural resources of a tourist destination. Study of sustainable tourism and its relation to planning a development based on improving the quality of life of the population, the experience of the visitor, the conservation of the environment and the achievement of higher levels of economic prosperity for the residents of the area, through the tourist activity.

TURI 3100 - Information Systems (3)

Importance of the available information systems and their application. Planning expenses, projections, tourist resource inventories and strategies used by competitors to reach their customers.

Prerequisite: TURI 3000, MAEC 2221, MKTG 1210.

TURI 3200 - Human Resources Management in The Hotel Industry (3)

Analysis of the effectiveness of the regulations and related practices with personnel through conferences, discussions and case studies. Emphasis on hiring, selection, assignment and development of human resources. Emphasis on the study of practices related to personnel in the hotel industry.

Prerequisite: TURI 2400, BADM 1900.

TURI 3210 - Planning and Tourist Development (3)

Survey of the factors that determine the success of a tourist destination as they relate to the planning and policies for the development of a country. Analysis of the planning process from its objectives to implementation. Evaluation of the importance of the architectonic design and the cultural patrimony in tourist facilities.

TURI 3220 - Trip Reservation System (3)

Analysis of the basic concepts of the use of computerized reservation systems for tourism agencies. Reservations for methods of transportation, lodging, restaurants and other touristic services. Quotes, creation and emission of travel documents such as: tickets, vouchers and others.

TURI 3230 - Accommodations Department Administration (3)

Integrated study of the accommodations department consisting of the reserve-reception areas, concierge, housekeeping, engineering and maintenance. Description of key concepts of this department, as well as the use of simulated and practical systems for student development in this area. Requires 45 hours of lecture-lab.

Prerequisite: BADM 2250.

TURI 3300 - Food and Services Management (3)

Importance of food management and control of material supplies and services. Development of a continuous plan for determining standards, operational budgets, analysis and control of costs, labor expenses, volume and profits, income and price calculations.

TURI 3400 - Meetings and Convention Management (3)

Sales process and servicing the meetings market. Identification and study of the segments that form this market. Analysis of effective sales techniques for these segments. Planning and developing different types of services for conventions and meetings.

Prerequisite: HMGT 1060, 2010, 2400.

TURI 3500 - Information Systems in The Hotel Industry (3)

Fundamental aspects of computerized systems and management of hotel information systems. Application of the computer to food, beverages, purchasing, sales and accounting.

Prerequisite: TURI 1900.

TURI 4010 - Cultural Heritage Tourism Management (3)

Analysis of the evolution of the history of cultural heritage with emphasis on oral heritage, historical memoir, scenery, territory, and its interrelation with culture. Application of the principles for sustainable heritage management for tourism use, as well as the formulation of sustainable strategies in the preparation of cultural products for tourism.

Prerequisite: TURI 1020, TURI 2200.

TURI 4303 - Food and Beverage Management III (3)

Different types of foods and beverages. Application of concepts of food and beverage preparation and service. Analysis and control of total costs in planning and serving food and beverages. Requires 30 hours of lecture and 45 hours of lab.

Prerequisite: TURI 3302.

TURI 4400 - Administration and Organization of Groups and Conventions (3)

Analysis of the meetings and conventions industry, concentrating on the practical study, planning, supervision and control guides used by planners of professional events. Discussion of the organization, preparation and operation of conventions, exhibitions and events. Emphasis on the ways and methods of sales used in the reserve of convention groups and events, as well as the distribution of administrative responsibilities in the operation.

TURI 4910 - Practicum in Tourism Administration (3)

Learning experiences in a real scenario for the specialization of tourism administration in a center approved by the faculty for the practice of the theories, concepts and acquired skills. Requires one hundred and eighty (180) hours in the Practice Center.

Prerequisite: Have approved all major courses and the authorization of the department's chair or program coordinator.

TURI 4915 - Internship (3)

Practice theories and learned concepts in a real setting. Work experiences supervised in the field of management of lodging facilities and under the supervision of a faculty member. The student is required to devote at least 15 hours to lectures and 90 hours to the practice center to complete the assigned work. Course must be taken the last academic term.

Prerequisite: Authorization from the department's chair.

VETC - Veterinary Technician

VETC 1100 - Introduction to Veterinary Sciences (2)

An overview of the history of veterinary sciences and the functions of a veterinary technician. Description of the different areas of a veterinary center and of the work performed in each of them.

VETC 1120 - Animal Anatomy and Physiology (3)

Description of the basic elements of animal anatomy and physiology. The terminology referring to animal anatomy and physiology is studied. The dog model is mostly used, comparing it with other animals and their systems. It requires 45 hours of conference and 30 hours of face-to-face or virtual closed laboratory.

VETC 2200 - Farm Animals (3)

Basic principles and concepts on health care, hygiene, first aid and maintenance of the farm's animal facilities. Attention and care of the farm animal before and after the emergency processes and surgical interventions. Requires 30 hours of lecture and 45 hours of face-to-face or virtual closed laboratory.

Prerequisite: VETC 1100 and VETC 1120.

VETC 2201 - Parasitology and Microbiology (3)

Description and identification of morphology, taxonomy, life cycles and epidemiological aspects of parasites, fungi and other microorganisms that affect animals.

Prerequisite: VETC 1120.

VETC 2202 - Clinical Laboratory (2)

Description of the procedures for the collection, handling, conservation and analysis of samples. Techniques commonly used in a veterinary clinical laboratory in hematology, urinalysis, chemistry, and cytology. Use of materials, equipment and identification of alterations in the samples. Application of information for the prevention of risks, accidents, current regulations or standards and the disposal of biomedical waste. Requires 60 hours of clinical practice.

Prerequisite: VETC 1100 AND VETC 1120.

VETC 2210 - Pharmacology and Toxicology (3)

Examination of the action of drugs on biological systems, sources, chemical properties and therapeutic uses. Fundamentals of posology and the identification of substances of a toxic nature for animal health.

VETC 2213 - Laboratory Animals (2)

Study and application of basic knowledge and skills for the management, care, common diseases and nutrition of animals used, raised or supplied for research purposes. In addition, a broad perspective on autopsy and euthanasia issues is presented. It is instructed in the management of exotic species and small mammals and emphasis is placed on the study of diseases and medicine of laboratory animals. Requires 60 hours of clinical practice.

Prerequisite: VETC 1100, VETC 1120, VETC 2202, and VETC 2220.

VETC 2220 - Veterinary Nursing (3)

Discussion of the processes of animal caring, vital signs, restraint techniques, and techniques to administer prescription drugs. Analysis of the symptoms of diseases and how to act in emergencies. It requires 45 hours of lecture and 45 hours of laboratory.

Prerequisite: VETC 1100 and VETC 1120.

VETC 2240 - Radiology (3)

Application of the fundamental concepts of the most used radiographic techniques and other diagnostic imaging techniques. Handling of equipment and personal protection. It requires 30 hours of lecture and 45 hours of laboratory.

Prerequisite: VETC 1100, VETC 1120, VETC 2202, VETC 2220, VETC 2201, VETC 2213 and VETC 2210.

VETC 2250 - Anesthesia and Surgery (3)

Preparation of the surgical room area and the organization of surgeries. Identification of materials, instruments and surgical equipment. Discussion and practice of anesthesia and asepsis techniques, cleaning and sterilization of the equipment. It requires 45 hours of lecture and 45 hours of laboratory.

Prerequisite: VETC 1100, VETC 1120, VETC 2202, VETC 2220, VETC 2201, VETC 2213 and VETC 2210.

VETC 2255 - Common Diseases in Domestic Animals (3)

Description of the most important and common pathologies in domestic animals in veterinary medicine. Clinical symptoms are related to diseases and diagnostic methods are discussed. Provides the student with the ability to differentiate between diseases of the same anatomical system and identify common treatments for them. The course promotes the animal health and the prevention of the diseases discussed

Prerequisite: VETC 1100, VETC 1120, VETC 2201.

VETC 2910 - Veterinary Technician Practice (2)

Experience for the acquisition, consolidation and integration of the skills and competences that correspond to the profile of the graduate's competences. 240 hours of supervised practice in the main areas of a veterinary center.

Prerequisite: Authorization from the department's chair or program coordinator.

VETC 2970 - Seminar (1)

The course seeks preparing the student to take their professional board exam. The content of the courses related to the occupation of the technician / technologist is reviewed. The responsibilities, skills, terminology and laws that pertain to the profession are discussed. Part of the responsibilities of the veterinary technician / technologist in the administrative area of the profession will be covered. It is required to take the seminar during the last semester of the Associate in Applied Sciences in Veterinary Technician.

VETC 3300 - Food Safety and Hygiene (3)

Discussion of the importance of a correct handling of animal-based products for human consumption. Study of the necessary measures to keep food in a perfect state of quality and hygiene, and to guarantee the protection of the health of the food handler and that of the consumers.

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VETC 3302 - Emergency and Critical Care (4)

Discussion of the theoretical and practical aspects in the management of medical and trauma emergencies that commonly occur in veterinary medicine. Recognize and perform an evaluation for cardiac arrest, respiratory, neurological, gastrointestinal and musculoskeletal emergencies. Practice the principles and techniques of fluid therapy and emergency drug administration. Topics related to the application of treatment protocols for cardiorespiratory arrest, neurological conditions, gastrointestinal crises, wounds and fractures, poisonings, dystocia, prenatal care in critical patients and nutrition of critical care patients are presented. This course requires 45 hours of class and 45 hours of laboratory.

Prerequisite: VETC 1100, VETC 1120, VETC 2220, VETC 2210, VETC 2240, and VETC 2250.

VETC 3311 - Animal Feed and Nutrition (3)

Identification of the basic principles of nutrition and feeding of both domestic animals and exotic species, their food and nutritional needs and the detection along with the solution of anomalies or diseases. Evaluation of feeding control and how it changes in the different stages of the animal's life and its physiological characteristics.

Prerequisite: VETC 1100 and VETC 1120.

VETC 4410 - Handling and Care of Equine (4)

Examination of the care, problems or diseases of horses. It includes preventive medicine, first aid, maintenance of facilities and strategies to assist the veterinarian in the surgical room and nursing. It requires 45 hours of class and 45 hours of laboratory.

Prerequisite: VETC 1120, VETC 2200 and VETC 2210.

VETC 4420 - Administration of Veterinary Clinics (3)

Training in the most important areas related to the administration of a veterinary clinic, including the legal requirements for its operation and marketing. The critical factors that define the quality and competitiveness of the service in a veterinary clinic are identified and discussed.

VETC 4910 - Practice of Veterinary Technology (3)

Two hundred and forty hours (240) of practice supervised by a veterinarian where the student will apply the knowledge, techniques and skills acquired in the program, incorporating professional ethics in daily clinical practice. This clinical experience will be on a rotating basis where they will be alternating between four different practice centers. These centers will be specific between experiences of general practice, emergency practice, farm animal practice and specialist practice.

Prerequisite: Authorization of the department's chair or program coordinator and be in the fourth academic year.

VETC 4970 - Integration Seminar (1)

Integration of the knowledge obtained in the basic courses through the oral and written presentation of a creative work, using as a primary basis, scientific articles in the student's specialty in the area of veterinary technology.

Prerequisite: Have approved 30 credits of the major courses in veterinary technology.

VGMA - Videogames and Mobile Applications

VGMA 1110 - Mobile Device Technologies (3)

Study of mobile devices, internal structures, standards, technical specifications, features, peripherals, and operating systems. Analysis of performance problems, program development, system testing and maintenance. Requires 45 hours of conference-laboratory.

VGMA 1120 - Programming Languages (3)

Introduction to the concepts of programming languages, with emphasis on programming logic for mobile devices. Design of structured programs and logical tools. Troubleshooting by implementing solutions through appropriate programming languages. It requires 30 hours of conference and 30 hours of closed laboratory.

VGMA 1130 - Digital Visual Arts (3)

Discussion of the fundamental visual concepts, terminologies, techniques and applications to operate digital images. Creation, manipulation and edition of original digital illustrations in two and three dimensions. It will include the modeling of objects by wiring for the assignment of textures, angles and lighting. It requires 30 hours of conference and 30 hours of closed laboratory.

VGMA 1210 - User Interface Design (3)

Study of the dominant tools from the industry used to create visual elements of user interfaces for mobile devices. Identification of common design elements and techniques used to create these elements. Application of the concepts and techniques to design intuitive interfaces, easy to use and that allow a maximum user experience. It requires 30 hours of conference and 30 hours of closed laboratory.

Prerequisite: VGMA 1120, VGMA 1130.

VGMA 1220 - Mathematics and Physics for Videogames (3)

Discussion focused on the mathematical and physical concepts necessary to develop a variety of videogame scenarios. It includes traditional physics to model the movement of objects in two and three dimensions. Development of programming methods on mobile devices. It requires 30 hours of conference and 30 hours of closed laboratory.

Prerequisite: GEMA 1200.

VGMA 1230 - Application Programming I (3)

Design and programming of multiplatform applications for mobile devices. Use of object-oriented programming techniques to design and create applications. Exploration of professional environment programming tools to develop intuitive mobile applications. It includes the coding, the correction of errors in the codes and the publication of applications. It requires 30 hours of conference and 30 hours of closed laboratory.

Prerequisite: VGMA 1120.

VGMA 2110 - Application Programming II (3)

Advanced study in design and development of mobile programming. It includes the user interface decisions required in the mobile design life cycle. Analysis of secure mobile application design, image animation, database manipulation, storage techniques, recovery, caching, and offline processing. It requires 30 hours of conference and 30 hours of closed laboratory.

Prerequisite: VGMA 1230.

VGMA 2120 - Digital Development and Narrative (3)

Exploring the elements of the narrative in the videogame development process and how they are used for the elaboration of the characters, the conflict and the plot. Emphasis on understanding the various narrative styles of video games. It includes the development of design documents that highlight the following elements: the characters, the locations, the dialog sequences, and the general gameplay for an original videogame idea. It requires 30 hours of conference and 30 hours of closed laboratory.

VGMA 2130 - Videogame Programming (3)

Study of the multiplatform programming techniques necessary to produce videogames with 2D and 3D graphics on mobile devices. Analysis of animation techniques, game building tools, input devices, sound, and graphics in real time. It also includes the analysis of the differences between the platforms, the central logic of the game, the proper use of external resources, and the publication. It requires 30 hours of conference and 30 hours of closed laboratory.

Prerequisite: VGMA 1210.

VGMA 2210 - Cloud Computation (3)

Design, implementation and testing of applications for mobile devices based on the cloud. It includes the study of related programs, online databases, writing techniques, content providers, and digital media, messaging, networks and services. The social, ethical and security problems that arise in the applications that operate through the cloud are also analyzed. It requires 30 hours of conference and 30 hours of closed laboratory.

Prerequisite: VGMA 2110.

VGMA 2220 - Artificial Intelligence (3)

Study of the concepts of artificial intelligence applied to videogames. It includes the design of sequences of instructions within game engines to apply artificial intelligence mechanisms. Analysis of the concepts related to learning, behavior, route selection, and movement models of the characters. It requires 30 hours of conference and 30 hours of closed laboratory.

Prerequisite: VGMA 2130.

VGMA 2230 - Creative Work (3)

Original final project that includes the design, development, programming, and publication of a videogame or application for mobile devices with commercial quality. It includes the necessary documentation for the creation of the presentation folder. It requires 45 hours of lecture-laboratory and additional hours of open laboratory.

Prerequisite: VGMA 1230, VMGA 2130.

USDX - ULTRASOUND DIAGNOSTIC

USDX 1000

USDX 1000 - Introduction to the Principles and Protocols of Diagnostic Ultrasound (3)

Study of the history, evolution and general principles of

Diagnostic Ultrasound. Discussion of the basic principles of ultrasound, its applications and uses. Description of the duties and responsibilities of the future professional, focused on the ethical and legal concepts of the discipline. Emphasis on the importance of positive attitudes towards their patients, teamwork and interaction with other people and professionals who are part of the interdisciplinary health team. Requires a total of 45 lecture hours. Concurrent with USDX 1010 and USDX 1110

USDX 1010 - Anatomy and Physiology in Ultrasound (3)

Explains the basic concepts of the structure and function of different organs that the human body has. Study of the relationship of the structure and function of the organs with the planes and segments of the human body. Requires 45 hours of conference. Concurrent with USDX 1000 and USDX 1110.

USDX 1110 - Patient Care in Diagnostic Ultrasound (2)

Study of the importance of holistic patient care during ultrasound procedures. Discussion of the management and care of the physical needs of the patient during said processes, taking into consideration the ethical and legal aspects that govern the profession. Development of basic skills related to effective communication, personal care, handling of body fluids and medical emergencies in radiological facilities. Requires 30 hours of lecture. Concurrent USDX 1000 and USDX 1010.

USDX 2000

USDX 2010 - Basic Physics in Diagnostic Ultrasound (2)

Discussion of the basic laws and ownership of malaria. Study of basic acoustic physics and acoustic waves in human tissue. Emphasis on ultrasound transmission in soft tissues, sound energy attenuation, parameters affecting sound transmission, and sound resolution. Requires a total of 45 lecture hours.

Prerequisite: GEMA 1200, USDX 1000, USDX 1010 and USDX 1110.

USDX 2011 - Intermediate Physics in Diagnostic Ultrasound (3)

Study of the basic principles of ultrasound and its terminology. Discussion of ultrasound interactions with tissue. Description of the mechanism of production and visualization of ultrasound. Identification of the types of transducers and their conduction. Emphasis on quality control, bioeffects, and artifacts in ultrasound imaging.

Requires a total of 45 lecture hours. Concurrent with USDX 2015, USDX 2016 and USDX 2017.

Prerequisite: USDX 2010.

USDX 2015 - Abdomen and Pelvis Ultrasound Procedure and Evaluation (3)

Discussion of the normal anatomy and physiology of the abdominal and pelvic structures. Study of scanning techniques, selection of transducers and protocols. Practical demonstrations of ultrasound techniques. It requires a total of 15 lecture hours and 30 controlled laboratory hours. Concurrent with USDX 2011, USDX 2016 and USDX 2017.

Prerequisite: USDX 1000, USDX 101O and USDX 2010. .

USDX 2016 - Abdomino-Pelvic Pathology (3)

Study of the most common pathologies and disease states of the abdomen and pelvis. Includes ultrasound appearance and symptoms. Emphasis on medical differentials and laboratory values. Selection of transducers and scanning protocols. Requires 45 hours of conference. Concurrent with USDX 2011, USDX 2015 and USDX 2017.

Prerequisite: USDX 1010 and USDX 2010.

USDX 2017 - Practice in Ultrasound I (3)

Integration of knowledge, skills and attitudes. Application of procedures related to instrumentation, anatomy and basic abdominal and pelvic pathologies. It requires 135 hours of supervised clinical practice in the controlled Ultrasound laboratory. Passing this course with a minimum grade of B is required. Concurrent with USDX 2011, USDX 2015 and USDX 2016.

Prerequisite: USDX 1000, USDX 111O and USDX 2010.

USDX 2020 - Pathology in Obstetrics and Gynecology (3)

Study of normal and pathological anatomy in obstetrics and gynecology in ultrasound. It also includes terminologies and conditions that can occur in the anatomy of the female pelvis and in fetal development during pregnancy. Emphasis on standard fetal tracking measurements, appearance, and embryological development during each trimester. Includes high-risk pregnancies. Requires 45 hours of conference. Concurrent with USDX 2021 and USDX 2022.

Prerequisite: USDX 2011, USDX 2015, USDX 2016 and 2017. .

USDX 2021 - Practice in Ultrasound II (3)

Application of the techniques of obstetric and gynecological studies under the supervision of a diagnostic ultrasound technologist. Also, the student will have the opportunity to recognize and apply abdominal and pelvic ultrasound study techniques. Requires 180 hours of clinical practice. Passing this course with a minimum grade of B is required. Concurrent with USDX 2020 and USDX 2022.

Prerequisite: USDX 2011, USDX 2015, USDX 2016, and USDX 2017. .

USDX 2022 - Ultrasound Procedure and Evaluation in Obstetrics and Gynecology (3)

Study of normal and pathological anatomy in obstetrics and gynecology. Discussion of the terminologies and conditions that can occur in the anatomy of the female pelvis and in fetal development during pregnancy, scanning techniques, selection of transducers and protocols. It requires a total of 15 lecture hours and 30 controlled laboratory hours. Concurrent with USDX 2020 and USDX 2021.

Prerequisite: USDX 2011, USDX 2015, USDX 2016 and USDX 2017. .

USDX 2030 - Procedure and Evaluation of Ultrasound in Superficial Anatomy (3)

Study of normal anatomy and physiology of surface structures, scanning techniques, transducer selection, and protocols. It requires 15 lecture hours and 30 laboratory hours. Concurrent with USDX 2031, USDX 2032 and USDX 2140.

Prerequisite: USDX 2020, USDX 2021 and USDX 2022.

USDX 2031 - Practice in Ultrasound III (3)

Application of techniques for superficial anatomy under the supervision of a Diagnostic Ultrasound technologist. Also, the student will have the opportunity to recognize and apply abdominal, pelvic, obstetrics and gynecology ultrasound study techniques. Requires 180 hours of clinical practice. Passing this course with a minimum grade of B is required. Concurrent with USDX 2030, USDX 2032, and USDX 2140.

Prerequisite: USDX 2020, USDX 2021, and USDX 2022. .

USDX 2032 - Pathology in Superficial Anatomy (2)

Study of the most common pathologies and disease states in superficial anatomy. Includes ultrasound appearance, symptoms, medical differentials, and laboratory values. Requires 30 hours of lecture. Concurrent with USDX 2030, USDX 2031 and USDX 2140.

Prerequisite: USDX 2020, USDX 2021 and USDX 2022. .

USDX 2040 - Integrating Workshop (2)

Integration of knowledge, skills and attitudes in previous courses. Examine the concepts included in the revalidation exam for the licensing of Diagnostic Ultrasound Technologists. Requirement: Be a candidate for graduation and approval of the Department Director. Passing this course with a minimum grade of B is required. Concurrent with USDX 2030, USDX 2031, and USDX 2032.

Prerequisite: USDX 2020, USDX 2021, and USDX 2022.

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