

MASTER OF SCIENCE IN
**DATA SCIENCE
AND ANALYTICS**

(MSDSA)

WHY OUR PROGRAM?

The Master of Science in Data Science and Analytics (MSDSA) program will give you the critical skills and expertise you need to excel in the growing field of data science and analytics and advance your career. As a graduate of the MSDSA degree program, you will have extensive training in data analytics and visualization, big data computing, machine learning, and software and programming languages. With the ability to understand trends and transform data into actionable insights, you will become an invaluable asset in helping organizations make key decisions and drive business success.

TUITION INFORMATION

Students pay TESU tuition for all courses, exams and other credit-earning options provided by TESU. Students are responsible for separate *Statistics.com* tuition for online courses provided by *Statistics.com* that are part of the Data Science and Analytics area of study.

NOTE: This degree program, including all required course work, is not eligible for federal financial aid.

MAKE YOUR MARK IN A DATA-DRIVEN WORLD

Data science is an emerging field that incorporates computer science, statistics and mathematical modeling with applications in business, government, the life sciences and social sciences. As we continue to transform into a data-driven world across many industries, skilled data analysts and scientists are needed more than ever.

Thomas Edison State University (TESU) has partnered with The Institute of Statistics Education at *Statistics.com* to offer a Master of Science in Data Science and Analytics (MSDSA) degree program that is delivered completely online and is structured around the unique needs of working adults. Through the MSDSA program, you will gain graduate-level theoretical knowledge, in-demand skills and the ability to derive value from data in real-world decision making.

PROGRAM ADVANTAGES

- ▶ Gain a unique opportunity to be part of a worldwide data science transformation
- ▶ Explore relationships in data and learn how to prepare data for analysis
- ▶ Students who complete this concentration may also earn a Graduate Certificate in Data Analytics

CAREER INSIGHTS

Individuals with graduate degrees earn an average of \$1 million more in lifetime income compared to high school graduates.*



Within a 100 mile radius of TESU:** Top Occupations:***

- ▶ **8.2% job growth (2020-2025) (Nation: +10.9%)**
- ▶ **92,729 known positions**
- ▶ **9,731 annual openings**
- ▶ **Median earnings ≈ \$102.7K/yr**
- ▶ Data Analyst
- ▶ Data Scientist
- ▶ Data Science / Analytics Manager
- ▶ Big Data Engineer

*<https://www.ssa.gov/policy/docs/research-summaries/education-earnings.html>

**Emsi Q2 2020 Data Set

*** <https://datajobs.com/big-data-salary>

WHY CHOOSE TESU?

As one of the first schools in the country designed specifically for busy, motivated adults, Thomas Edison State University is dedicated to providing you with a high-quality education — anytime, anywhere.

- ▶ **Exceptional Value:** Competitive tuition and fees. Plus, financial aid and scholarships are available.
- ▶ **Barrier Free:** Students who receive an undergraduate degree with a GPA of 3.0 or higher will be automatically admitted to a graduate program.* No GRE/GMAT or recommendation letter required.
- ▶ **Degree Flexibility:** Engage in your courses whatever time of day works for you. Courses are available 24/7.

*Several programs have additional requirements beyond GPA for admission.

ONLINE. ACCREDITED. RESPECTED.

Three words that characterize Thomas Edison State University's (TESU) unique approach to providing quality higher education in today's technology-fueled times.

Dedicated to educating adult learners for five decades, TESU has set the standard in online learning. As the leader in online education and a national leader in the assessment of adult learning, TESU is accredited by the Middle States Commission on Higher Education and has been called "the college that paved the way for flexibility" by *The New York Times*.

Our innovative online and independent study courses and credit-by-exam programs give you the flexibility to pursue your degree when and where it is convenient for you. With more than 100 areas of study, TESU offers associate, bachelor's, master's and doctoral degrees and undergraduate and graduate certificates. One of New Jersey's senior public institutions, TESU's liberal credit transfer policies and tuition models remove barriers for adults pursuing higher education. Our resume-relevant programs provide career-building skills to help you meet your educational and professional goals.

YOU'RE READY TO STUDY WITH THE LEADER IN ONLINE EDUCATION. EARN YOUR DEGREE ON YOUR SCHEDULE. VISIT TESU.EDU AND APPLY TODAY.

THOMAS EDISON
STATE UNIVERSITY

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Courses and Credit Allocation

MASTER OF SCIENCE IN DATA SCIENCE AND ANALYTICS

Credits

MSDSA CORE COURSES 24

Students select one of the following: 3

DSI-505 Programming 1: Python
- OR -

DSI-506 Programming1: R

Students select one of the following: 3

DSI-507 Programming 2: Python
- OR -

DSI-508 Programming2: R

DSI-530 Introduction to Database Queries 3

Students select one of the following: 3

DSI-601 Predictive Analytics 1 – Machine Learning Tools: Python
- OR -

DSI-604 Predictive Analytics 1 – Machine Learning Tools: R

Students select one of the following: 3

DSI-602 Predictive Analytics 2 – Neural Nets and Regression: Python
- OR -

DSI-605 Predictive Analytics 2 – Neural Nets and Regression: R

Students select one of the following: 3

DSI-603 Predictive Analytics 3 – Dimension Reduction, Clustering and Association Rules: Python
- OR -

DSI-606 Predictive Analytics 3 – Dimension Reduction, Clustering, and Association Rules: R

DSI-622 Interactive Data Visualization 3

DSI-700 Applied Predictive Analytics (Capstone) 3

ELECTIVES (CHOOSE 4) 12

DSI-509 Text Mining 3

DSI-611 Natural Language Processing (NLP) 3

DSI-612 Deep Learning 3

DSI-613 Anomaly Detection 3

DSI-510 Forecasting Analytics 3

DSI-614 Customer Analytics in R 3

DSI-640 Spatial Statistics with Geographic Information Systems 3

DSI-511 Introduction to Network Analysis 3

DSI-608 R Programming Intermediate 3

DSI-610 Optimization – Linear Programming 3

DSI-625 Risk Simulation and Queuing 3

DSI-621 Integer & Nonlinear Programming, and Network Flow 3

TOTAL 36