

## INTERDISCIPLINARY DATA SCIENCE MASTER'S DEGREE PROGRAM

The Data Science market is projected to be worth \$138 billion by 2025, and learning how to responsibly collect, analyze, and apply data to a variety of fields will be key to success for FSU students now and into the future.

In FSU's Interdisciplinary Data Science Master's Degree Program, or IDS, students acquire the technical and analytical skills that will propel them into careers across diverse industries, from the sciences to health care, from finance and economics to the humanities and more.

FSU's IDS program leverages the power of the university's heritage strengths in the STEM disciplines to offer coursework and training at the graduate level in majors including computational science, computer science, mathematics, and statistics.

Graduates of the program will fill a growing demand for a workforce trained in data science, and possess sought-after skills to read, analyze, explore, model, and draw conclusions from the highly complex, multi-dimensional, rapidly expanding, and diverse data universe. Sectors where these skills will prove indispensable include cybersecurity, data information processing, financial services, epidemiology, public health, survey research, airline and auto industries, real estate, online retail and more.

FSU's program is unique in its inclusion of ethics as related to data mining and data extraction, and communication that strengthen the student's sense of responsibility and value to their employer, consistent with the goals of a modern liberal arts education.

### Internship and career opportunities

Completing an internship or research experience is not a requirement for graduation from the IDS program, however, the curriculum design allows students to pursue such opportunities to hone their job skills during the summer.

FSU's established track record of placing graduate students into competitive internships highlights the scale and prestige of opportunities available to IDS students.

### Data Science Industry Outlook

The Robert Half Salary Report for 2024 lists the data scientist median salary at \$145,000. Applicants holding a master's degree can expect starting salaries approaching \$115,000.

Glassdoor ranks data scientist as the third "Best Job in America" based on career opportunities, number of open data-science jobs, and average salaries earned by data scientists.

The U.S. Bureau of Labor Statistics projects jobs for computer and information research scientists, and data scientists will experience 17% growth through 2032.

LinkedIn notes there are 28,000-plus data science job opportunities in the U.S. today, while Glassdoor and Indeed show 41,000 and 14,000 openings, respectively.

Experience, education, skills, industry, location, and hiring organization all impact starting salaries new data science graduates can expect to earn.

### Admission Requirements

The FSU IDS program is a self-pay program. In addition to meeting FSU and College admission requirements for graduate study, each applicant for the IDS program must:

- Have earned a bachelor's degree from an accredited institution and possess a minimal background consisting of Calculus 2 (MAC 2312 or equivalent), Introductory Statistics (STA 2122 or equivalent), and experience with an object-oriented programming language, preferably Python or R. Coursework in linear algebra is desirable, but not mandatory;
- Have a minimum 3.0 GPA (B or better average) on the last 60 hours of undergraduate credits and be in good standing at the institution of higher learning last attended;
- Provide a statement of intent and CV or résumé; and
- Provide three letters of recommendation discussing the student's aptitude for graduate study.

A GRE score is not required for admission to the FSU IDS program through 2026.

Different majors and advanced electives may require additional prerequisites, which students may need to take additional coursework to satisfy.

## APPLY NOW

# IDS Program Coursework

FSU's Interdisciplinary Data Science Master's Degree Program curriculum is delivered exclusively at the university's Tallahassee campus. Students will complete a series of core courses that provide a solid starting point in mathematics, machine learning, statistics, data ethics, and databases, along with electives that support a specific major area of study.

All students take 18 credits of core coursework and 12 credits of elective courses, selected by the student together with their advisory committee, to define a specific major (computational science, computational linguistics, computer science, mathematics, or statistics) within one of the four concentration areas.

## Interdisciplinary Data Science Core Coursework

- Mathematics for Data Science (3)
- Introduction to Data Science (3)
- Applied Regression Methods (3)
- Machine Learning (3)
- Data Mining (3)
- Data Ethics (2)
- Professional Development Seminar (1)

The remaining 12 credits are elective courses, which effectively define the different majors. Elective choices are listed for each major.

## Interdisciplinary Data Science: Computational Linguistics

### Restricted Electives (Choose two or more courses from the following):

- Corpus Linguistics, Text Analysis, and Deep Learning (3)
- Quantitative Methods in Language Research (3)
- Computational Linguistics (3)

### Free Electives (Choose one or more courses from the following):

- Patterns of Sounds (3)
- Seminar on Language Invention (3)
- Psycholinguistics I: Sentence Processing (3)
- Psycholinguistics II: Lexical Processing (3)
- Eye-Tracking Methodology (3)
- Additional courses, as well as research opportunities, may be pursued in consultation with the advisor.

## Interdisciplinary Data Science: Computational Science

### Restricted Electives (Choose two or more courses from the following):

- Monte-Carlo Methods (3)
- Scientific Visualization (3)
- Scientific Programming (3)
- Applied Computational Science I (4)
- High-Performance Computing (3)
- Computational Probabilistic Modeling (3)
- Data Science for Health (3)

### Free Electives:

- Two courses from among the electives offered by the other majors participating in the IDS program.

## Interdisciplinary Data Science: Computer Science

### Required Electives (Choose two courses from the following):

- Advanced Topics in Data Science (3)
- Advanced Data Mining (3)
- Projects in Data Science (3)

### Restricted Electives:

One course in Cybersecurity chosen from the following, based on student background:

- Computer Security Fundamentals for Data Science (3)
- Computer Security (3)

### One course from the following:

- Deep and Reinforcement Learning (3)
- Artificial Intelligence (3)
- Parallel and Distributed Systems (3)
- Computer Architectures (3)
- Data and Computer Communications (3)
- Computer and Network Administration (3)
- Concurrent, Parallel, and Distributed Programming (3)
- Advanced Algorithms (3)
- High Performance Computing (3)
- Advanced Operating Systems (3)
- Database Systems (3)

## Interdisciplinary Data Science: Mathematics

### Restricted Electives (Choose at least three courses from the following):

- Principles and Foundations of Machine Learning
- Numerical Linear Algebra (3)
- Numerical Optimization (3)
- Graphs and Networks (3)
- Topological Data Analysis

### Free Electives:

- Advanced Topics in Data Science (3)
- Distribution Theory and Inference (3)
- Statistics in Application I (3)
- Statistics in Application II (3)
- Foundations of Computational Mathematics (3)
- Foundations of Computational Mathematics II (3)

## Interdisciplinary Data Science: Statistics

### Restricted Electives (Choose three courses from the following):

- Data Management and Analysis with SAS I (3)
- Advanced Data Management and Analysis with SAS (3)
- Computational Methods in Statistics I (3)
- Statistics in Applications I (3)
- Applied Logistic Regression (3)
- Distribution Theory and Inference (3)
- Applied Nonparametric Statistics (3)
- Applied Multivariate Analysis (3)
- Time Series and Forecasting Methods (3)
- Introduction to Statistical Consulting (3)
- Object Data Analysis (3)

### Free Electives (Choose one course from the following):

- Data Visualization (3)
- Cloud Computing (3)
- Artificial Intelligence (3)
- Graphs and Networks (3)