LEHIGH UNIVERSITY

P.C. Rossin College of Engineering and Applied Science

DATA SCIENCE

Graduate Degree Program

WHAT IS DATA SCIENCE?

Data science is a broad, interdisciplinary field, encompassing mathematical and computational methods of collecting data, processing and validating it, and putting it to a practical use—whether that's a graphic visualization of the spread of a virus, for example, or a prediction of a prospective borrower's likelihood to default on a mortgage generated through machine learning.

The work of data scientists across a diverse set of fields—cybersecurity, supply chains, medicine, marketing analytics, and risk analysis, to name a few—is transforming nearly every aspect of our lives.

With these advances come consequential ethical questions around using data responsibly and addressing bias and fairness in the algorithms that power these advanced decision-making systems.

Career pathways in data science lead to the world's leading research and technology giants as well as to sectors including healthcare, finance, manufacturing, and even nonprofits.

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WHY DATA SCIENCE?

YOUR BACKGROUND

Engineering

Science

Mathematics

Economics

Technology

YOUR PASSIONS

"I like using data to make better decisions"

"Data and artificial intelligence will change every industry"

"I like solving complex problems"

"I want AI to help society"

"Data should be used responsibly and ethically"

DATA SCIENCE

Skills and Career Pathways

DATA ENGINEERING
BUSINESS INTELLIGENCE
MARKETING ANALYTICS
DATABASE ADMINISTRATION
STATISTICS
MACHINE LEARNING
=DATA= MINING
DEEP NETWORKS
GENERATIVE AI
=BIG= DATA
DATA ANALYTICS
DATA ARCHITECTURE
LARGE LANGUAGE MODELS
HEALTH ANALYTICS

OUR PROGRAM

The Curriculum

- Interdisciplinary approach
- Foundations in math, coding, and computing
- Analytical focus
- Project-based learning
- Ethics
- Electives from multiple colleges

The Experience

- On campus and/or online
- Part time or full time
- Multidisciplinary faculty
- Opportunities for short-term research

Master of Science in Data Science Courses

Foundations (3 credits)

Foundations (3 credits)

Foundations (3 credits)

Statistics and Machine Learning (3 credits)

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Big Data or Accelerated Computing (3 credits)

Ethics in Data Science (3 credits)

Electives (3 credits)

Electives (3 credits)

Electives (3 credits)

Certificate in Data Science Courses

Foundations (3 credits)

Foundations (3 credits)

Statistics and Machine Learning (3 credits)

Electives (3 credits)

How Will You Benefit?

In as little as 10 months, you will graduate with a skill set that will allow you to work in a multitude of fields. Your master's degree or certificate will translate to career opportunities in healthcare, computer engineering, business and marketing, and beyond. You will be ideally positioned with a degree or certificate in a field that is projected to grow by more than 30 percent by 2030.

WHAT SETS US APART

Lehigh's Data Science Graduate Program provides a rigorous curriculum that teaches the foundations of data science and the skills to apply its tools in many disciplines and career paths. An interdisciplinary team of faculty leverages expertise from across multiple departments in the P.C. Rossin College of Engineering and Applied Science. Students engage in meaningful classroom experiences to learn and implement data science methods, and they tackle project-based work that applies that understanding. Graduates join a connected global community of Lehigh Engineering alumni who are leading in industry, academia, and government sectors.

Careers in Data Science

The program paves the way for students to unleash the power of data science to advance in their current careers in education, healthcare, science, liberal arts, and business. Graduates also use their highly sought-after skills to set a new career trajectory in roles such as:

- Data Analyst
- ML Engineer
- Business Analyst
- Data Analyst
- Data Engineer
- Marketing Analyst
- Database Administrator
- Data Architect
- Statistician
- Public Health Analyst
- Data Scientist

LEHIGH UNIVERSITY is located in the heart of the beautiful Lehigh Valley, the third largest metropolitan area in Pennsylvania. Home to top-notch entertainment, shopping, and restaurants, our region is also known for its seemingly endless array of opportunities for outdoor exploration and adventure.

Bethlehem is a vibrant city, rich in history and radiating small-town friendliness and feel. The arts are alive here, with exciting seasonal events, nationally recognized musical acts, comedy, art, and more. Known as the "City of Festivals," Bethlehem hosts 20-plus major festivals and over 150 mini-festivals each year.

Need more action? Plan a day or weekend trip to New York City, Philadelphia, the Pocono Mountains, or the New Jersey and Delaware beaches—all within reach by car or public transportation.

engineering.lehigh.edu/datascience