

DATA SCIENCE

Data Science

Over the last several decades there has been an explosion of data in nearly every field imaginable including business, marketing, sports, as well as scientific fields such as medicine, genetics, and neuroscience. As a result of this deluge of data, the demand for individuals with the skills to manage, analyze, and communicate results based on large amounts of data is as high as it has ever been.

Data science is a multi-disciplinary field combining techniques from mathematics, computer science, and statistics to organize, analyze, visualize, and extract useful information from data.

At the graduate level, students can pursue a Master's Degree (M.S.) in Data Science with an option between thesis track and non-thesis track. In addition, undergraduate students have the option to pursue a Bachelor's and Master's degree in five total years through the 4+1 program.

Further Information

If you have questions about the graduate programs in Data Science at Loyola University Chicago, please contact Dr. Yasin Silva, Graduate Program Director for Data Science, and Dr. Swarnali Banerjee, Director of the Data Science Program.

GRADUATE PROGRAMS

- Data Science (MS) (<https://catalog.luc.edu/graduate-professional/graduate-school/arts-sciences/data-science/data-science-ms/>)

Graduate & Professional Standards and Regulations

Students in graduate and professional programs can find their Academic Policies in Graduate and Professional Academic Standards and Regulations (<https://catalog.luc.edu/academic-standards-regulations/graduate-professional/>) under their school. Any additional University Policies supersede school policies.

DATA SCIENCE GRADUATE HANDBOOK

Access the latest version of the Data Science Graduate Handbook (https://www.luc.edu/media/lucedu/cas-datascience/Data_Science_Graduate_Handbook.pdf). This document contains the academic policies for the Data Science MS and BS/MS programs, a description of the general duties of graduate assistants in these programs, and multiple resources available for data science students.

DSCI 401 Introduction to Data Science (4 Credit Hours)

Pre-requisites: Restricted to Graduate students

This course provides students with an introduction to data science using the R programming language covering such topics as data wrangling, data visualization, interacting with databases, principles of reproducible research, building simple statistical models/machine learning and data science ethics.

Outcomes:

Students will obtain an extensive background in the basic tools used in the field

DSCI 470 Data Science Consulting (2 Credit Hours)

Pre-requisites: STAT 408

Students will work on a research project with a client acting as a consultant on the statistical and computational aspects of the project. Students are required to meet with a client, develop a strategy for addressing their problem, and present their results to the client (and their classmates).

Outcomes:

Students will apply methods learned in prior classes to address a real-world problem, gain oral and written presentation skills, and improve collaboration skills

DSCI 494 Data Science Research Design (2 Credit Hours)

Restricted to DSCI Graduate students. Research practices, including data collection and management, the experimental design process, and tools for critical analysis and preparation of scientific literature will be discussed.

Outcomes:

Students can describe and implement research design practices in data science

DSCI 499 Data Science Research (1-8 Credit Hours)

Restricted to DSCI Graduate students. Students will conduct independent hypothesis-driven data science research under faculty guidance. Research efforts will include literature surveys, research design, algorithm and software development, and data analysis.

Outcomes:

Students can develop and utilize techniques for data science research

DSCI 595 Thesis Supervision (1 Credit Hour)

Pre-requisites: DSCI 499

Research under faculty guidance including training in scientific writing and the production of a thesis and research presentation.

Outcomes:

Students will develop skills in scientific writing and presentation; At the conclusion, students will present (written and oral) the results of their research