Data Science Major

The Data Science major prepares students to be evidence-based decision-makers, critical consumers of information, and engaged citizens in a 21st Century world that is frequently observed and digitized, constantly evolving, and requires multidisciplinary thinking. Students study data science methods to better understand our complex, technology-driven world and to make evidence-based decisions. They also apply these methods within one or more disciplines across the liberal arts curriculum.

Data Science Methods

- DATA 101: Introduction to Data Science
- DATA 201: Advanced Data Science (Prereq: DATA 101)
- DATA 373: Applied Machine Learning (Prereq: CSCI 151)

Statistical Methods

- DATA 113: Introduction to Statistics
- DATA 213: Statistical Modeling (Prereq: DATA 113)

Computational Methods

- CSCI 150: Introduction to Computer Science
- CSCI 151: Data Structures (Prereq: CSCI 150)

Project-Based Learning (Choose One)

- DATA 401: Data Science Seminar
- Data Science Research
- Data Science Internship

Advanced Methods (Choose Two)

Students expand their skills in Data Science by taking two courses on Advanced Methods (data science, statistical, or computational)

Applications (Choose Two)

Students explore courses that develop context for interpreting data and practice applying data science methods to solve real-world problems across disciplines

Advanced Methods Courses (choose 8 credits)

Computer Science
- CSCI 280, 311, 313, 374

Data Science and Statistics
- DATA 237, 336, 378

Mathematics
- MATH 232, 335

Physics
- PHYS 290

Economics
- ECON 255, 355

Politics
- POLT 205

Psychology
- PSYC 200, 300

Sociology
- SOCI 301+302

Applications Courses within Concentrations (choose 8 credits)

Natural Sciences

Biology
- BIOL 211, 322, 336

Chemistry/Biochemistry
- CHEM 211, 339, 341, 349

Computer Science
- CSCI 344, 353, 364, 375

Environmental Studies/Sciences
- ENVS 316, 340

Geosciences
- GEOS 210, 335

Neuroscience
- NSCI 302, 321, 338, 361

Physics
- PHYS 418

Social Sciences

Economics
- ECON 341, 427, 430, 432, 435, 440, 441, 448, 449

Environmental Studies/Sciences
- ENVS 322, 354, 390, 432

Geosciences
- GEOS 335

Psychology
- PSYC 301, 302, 303, 304, 306, 308, 310, 311

Statistical Theory and Applications

Advanced Methods (required instead of above)
- MATH 231, 232

Data Science and Statistics
- DATA 336 (required)
- DATA 237, 378

Note: Research conducted for course credit (including Honors) within a natural science or social science department may count as one Applications course, provided that the research project:

1) is confirmed by the Data Science Program Committee as involving sufficient data science activities, and
2) totals 4 credit hours (i.e., either one 4 credit research course or two 2 credit research courses).