

1. Changes to Data Science course for Fall 2022 catalog

Add prerequisites:

DATA 202 - Data Management and Visualization

3 Credit Hours

Introduction to foundational concepts and techniques in the management and presentation of data for effective data-informed decision making. Explores data storage and indexing strategies, data warehousing, metadata management, visualization of time-series and geospatial data, and best practices for presenting data to inform decision making, such as heat maps and infographics.

(RE) Prerequisite(s): **COSC 102 or COSC 111**, [DATA 201](#)*.

Rationale: The additional prerequisites are intended to ensure that students have sufficient computer programming experience to complete DATA 202 assignments successfully.

2. Changes to Data Science minor for Fall 2022 catalog

Data Science Minor

The intercollegiate Data Science minor consists of **five six** courses and **14-15 17-18** hours. ~~The~~ **four** **Four** core courses give students a broad background in the foundations of Data Science. The fifth course is a directed elective that allows a student to apply Data Science techniques to a specific field, to deepen their understanding of Data Science methodologies, or to gain further background in the ethical and policy considerations of Data Science. ~~, or to~~ **In the sixth course,** **students** pursue **a an interdisciplinary, team-based** capstone experience.

1. Complete four **core courses:**

- [DATA 201 - Data Knowledge and Discovery](#)
- [DATA 202 - Data Management and Visualization](#)
- [DATA 301 - Data Stewardship and Ethics](#)
- [DATA 302 - Analytical Methods of Data Science](#)

2. Complete one course chosen from any of the **six **five** lists below:**

Mathematical and Statistical Foundations of Data Science:

- [BAS 320 - Regression Modeling](#)
- [BAS 471 - Statistical Methods](#)
- [MATH 323 - Probability and Statistics](#)
- [MATH 371 - Numerical Algorithms](#)
- [MATH 423 - Probability](#)
- [MATH 424 - Stochastic Processes](#)
- [MATH 425 - Statistics](#)

Methods of Data Science:

- [BAS 474 - Data Mining and Business Analytics](#)
- [COSC 425 - Introduction to Machine Learning](#)
- [COSC 453 - Data Visualization](#)
- [IE 301 - Operations Research I: Deterministic Models](#)
- [IE 310 - Operations Research II: Probabilistic Models](#)
- [IE 340 - Design of Experiments](#)
- [INSC 486 - Data Analytics](#)

Data Management and Visualization:

- [ARCH 321 - Representation IV: Information Modeling](#)
- [BAS 476 - Data Engineering and Visualization](#)
- [COSC 465 - Databases and Scripting Languages](#)
- [GEOG 311 - Geovisualization and Geographic Information Science](#)
- [IARC 321 - Advanced Representation](#)
- [INDS 321 - Digital Representation and Fabrication for Industrial Design](#)
- [INSC 360 - Programming for Information Applications](#)
- [INSC 384 - Database Design](#)
- [INSC 484 - Database Applications](#)
- [INSC 489 - Information Visualization](#)

Ethics and Policy in Data Science:

- [INSC 305 - Internet and Society](#)

Data Science in Context:

- [ACCT 481 - Accounting Analytics](#)
- [ANTH 446 - Archaeological Statistics](#)
- [ANTH 449 - Big-data Social Sciences](#)
- [BAS 475 - Applied Time Series and Forecasting](#)
- [BCMB 422 - Computational Biology and Bioinformatics](#)
- [CLAS 446 - Archaeological Statistics](#)
- [COSC 445 - Fundamentals of Digital Archeology](#)
- [EEB 411 - Biostatistics](#)
- [ECON 381 - Introduction to Econometrics](#)
- [ECON 481 - Elements of Economic Forecasting](#)
- [FWF 313 - Measurements and Sampling](#)
- [FWF 430 - Introduction to Geographic Information Systems \(GIS\) for Natural Resources](#)
- [GEOG 414 - Spatial Data Management for Socioeconomic and Environmental Applications](#)
- [IE 465 - Applied Data Science](#)
- [MGT 462 - Managerial Analytics](#)
- [MGT 465 - Workforce Analytics](#)
- [PLSC 461 - Statistics for Biological Research](#)
- [PSYC 385 - Statistics in Psychology](#) *

Capstone Experience:

3. Complete one course:

- [DATA 499 - Data Science Capstone](#)

* Meets [University General Education Requirement](#).

Rationale: Adding a required capstone experience will better prepare students for careers in Data Science.