

BS in DATA SCIENCE Degree Requirements

2021-2022

Premajor Requirements

C or better in each course, and a minimum 3.0 average GPA (overall and within pre-major courses) required to apply for full major status.

1. CS 1400, Intro to Comp Prog _____ (3)

AND

- CS 1410, Intro to OOP _____ (4)

OR

- CS 1420 Accel OOP _____ (4)
2. CS 2420, Algorithms/Data Struct. _____ (4)
3. Math 1310, Engineering Calculus I (QR) _____ (4)
4. Math 1320, Engineering Calculus II (QR) _____ (4)

General Ed Requirements

Honors options also accepted for WR2, CW, and AI requirements.

1. Wrtg 2010, Intermediate Writing (WR2) _____ (3)
2. Wrtg 3014 or 3015 (CW) _____ (3)
3. American Institutions (AI) _____ (3)

Specific Ethics of Data course

4. DS 3390, Ethics in Data Science (BF?) _____ (3)

FIVE more Intellectual Exploration (IE) courses required. TWO must be upper division (3000-level or above), ONE must satisfy the Diversity requirement, and ONE must satisfy the International requirement.

5. Fine Arts (FF): _____ (3)
6. Fine Arts (FF): _____ (3)
7. Humanities (HF): _____ (3)
8. Humanities (HF): _____ (3)
9. Social/Behavioral Science (BF): _____ (3)

Recommend ECON 2010 or ECON 2020

- Upper Division (3000+ level IE) _____
- Upper Division (3000+ level IE) _____
- Diversity (DV) _____
- International (IR) _____

Analytical Foundations²

1. CS 2100, Discrete Structures _____ (3)
2. Math 2270, Linear Algebra _____ (4)
3. Math 3070, Applied Statistics 1 _____ (4)
or CS 3130/ECE 3530, Eng. Prob Stats _____ (3)
4. Math 3080, Applied Statistics 2 _____ (4)
5. DS 3190, Foundations of Data Analysis _____ (3)

Computing Foundations²

1. DS 2500, Data Wrangling _____ (3)
2. CS 3500, Software Practice I _____ (3)
3. CS 4150, Algorithms _____ (3)

Core Data Science²

2.5 GPA required to graduate.

1. DS 4140, Data Mining _____ (3)
2. DS 4350, Machine Learning _____ (3)
3. DS 4530, Database Systems _____ (3)
4. DS 4630, Visualization for Data Science _____ (3)

Elective - Data Analysis Breadth²

Must choose 3 classes. 2.5 GPA required to graduate. Below are pre-approved options.

1. CS 3540, Human Computer Interactions _____ (3)
2. CS 4300, Artificial Intelligence _____ (3)
3. CS 4640, Image Processing Basics _____ (3)
4. Math 5010, Intro to Probability _____ (3)
5. Math 5040, Stochastic Processes 1 _____ (3)
6. Math 5080, Statistical Inference 1 _____ (3)
7. Math 5090, Statistical Inference 2 _____ (3)
8. Math 5770, Optimization _____ (3)
9. CS 5150, Advanced Algorithms _____ (3)
10. CS 5340, Natural Language Processing _____ (3)
11. CS 5635, Visualization for Scientific Data _____ (3)

Elective - Data Domain²

Must choose 3 classes from this link

1. _____ (3)
2. _____ (3)
3. _____ (3)

Capstone Requirements²

Choose ONE set (to be replaced with DS-specific ones):

1. DS 4800, Senior Capstone Design _____ (3)
2. DS 4850, Senior Capstone Project _____ (3)

or

1. DS 4940, Undergraduate Research _____ (3)
2. DS 4970, Bachelors Thesis _____ (3)