

MSE-DS Degree Requirements for students enrolled Spring 2025 and forward:

Please note: The following curriculum is pending final approval by the University.

To earn an MSE-DS Online degree, you'll complete ten (10) course units – three (3) foundational courses units, four (4) core course, two (2) technical elective units and one (1) open elective unit. All courses are fully online, and there are no required real-time sessions.

Foundations:

3 Credit Units

- CIT 5950 Computer Systems Programming
- CIT 5960 Algorithms and Computation
- CIS 5150: Fundamentals of Linear Algebra & Optimization **OR** Mathematical Foundations for Machine Learning I & 2: Probability & Algebra (both .5 CUs) (*new course, tentative title*)

Core:

4 Credit Units

- CIS 5450 Big Data Analytics
- CIS 5500 Database & Information Systems
- ESE 5410 Machine Learning for Data Science
- ESE 5420 Statistics for Data Science

Tech Electives:

2 Credit Units

- CIS 5210 Artificial Intelligence
- CIS 5300 Natural Language Processing
- ESE 5460 Principles of Deep Learning
- CIS 5810 Computer Vision & Computational Photography
- EAS 5740 How to Use Data (.5 CU)
- EAS 5850 Imaging Informatics (.5 CU)
- EAS 5860 Medical Image Analysis (.5 CU)
- DATS 5980 Data Science Capstone

Free Electives:

1 Credit Unit

- Any online EAS/CIS/ESE course

