

Data Science and Engineering (On-Campus or Online) — MS

On Campus or Online

The Master of Science in Data Science and Engineering (MS-DSE) degree entails a minimum of 30 semester graduate credit hours. There are two concentrations in the MS-DSE program: *Data Engineering* administrated by the Department of Computer Science and Software Engineering; and *Data Science* managed by the Department of Mathematics and Statistics.

The course list for the Data Engineering concentration offered by the Department of Computer Science and Software Engineering:

| Code | Title | Hours |
|------------------------------------|---|-----------|
| COMP 6120 | Database Systems I | 3 |
| COMP 6130 | Data Mining | 3 |
| COMP 6630 | Machine Learning | 3 |
| STAT 6000 | Intermediate Statistical Methods for Data Science | 3 |
| STAT 6600 | Probability and Statistics for Data Science | 3 |
| STAT 6650 | Statistical Learning | 3 |
| Select 6 Credits in COMP 6000-8999 | | 6 |
| Select 3 Credits in 6000-8999 | | 3 |
| COMP 7980 | Capstone Engineering Project | 3 |
| Total | | 30 |

The course list for the Data Science concentration offered by the Department of Mathematics and Statistics:

| Code | Title | Hours |
|------------------------------------|---|-----------|
| STAT 6000 | Intermediate Statistical Methods for Data Science | 3 |
| STAT 6600 | Probability and Statistics for Data Science | 3 |
| STAT 6650 | Statistical Learning | 3 |
| COMP 6120 | Database Systems I | 3 |
| COMP 6130 | Data Mining | 3 |
| COMP 6630 | Machine Learning | 3 |
| Select 6 Credits in STAT 6000-8999 | | 6 |
| Select 3 Credits in 6000-8999 | | 3 |
| STAT 7940 | Capstone Project | 3 |
| Total | | 30 |

Depending on the concentration, graduate students are required to take the following courses. The two concentrations share the same list of six foundational courses. Among the three elective courses related to data science and engineering, Data Engineering concentration students must choose at least two COMP6/7000-level graduate courses, whereas Data Science concentration students are required to take at least two STAT6/7000-level graduate courses.

Both the Data Engineering and Data Science concentrations offer a list of elective courses that are highly relevant to data science and engineering. The course selections are at the discretion of the students and the respective graduate program officer (GPO).

Students who have taken the 5000#level version of any 6000#level course cannot take the course in its 6000#level format. Those students must substitute other graduate courses as directed by the GPOs. All the courses including COMP 7980 and STAT 7940 in the degree must be taken for a grade.