# *Data Science and Engineering Bachelor of Science Program*

## FRESHMAN YEAR

| First Semester | Credits | Second Semester | Credits |
|---|---|---|---|
| Science lab course[1] | 4 | Science lab course[1] | 4 |
| MATH 1131Q – Calculus I | 4 | Math 1132Q – Calculus II | 4 |
| CSE 1010 – Intro Computing for Engineers | 3 | CSE 2050 – Data Structures & Object-Oriented Design | 3 |
| ENGR 1000 – Orientation to Engineering | 1 | ENGL 1007 – Seminar in Writing | 4 |
| Area 2 (Social Sciences) | 3 | | 15 |
| | 15 | | |

## SOPHOMORE YEAR

| First Semester | Credits | Second Semester | Credits |
|---|---|---|---|
| Additional science course[1] | 4 | CSE 3140 – Cybersecurity Lab | 2 |
| CSE 2500 - Intro to Discrete Systems | 3 | CSE 3500 - Algorithms and Complexity | 3 |
| CSE 2600 – Intro to Data Science & Engineering | 3 | STAT 3025Q – Statistical Methods | 3 |
| MATH 2110Q – Multivariate Calculus | 3 | Area 2 (Social Science) | 3 |
| Area 1 (Arts and Humanities) | 3 | MATH 2210Q – Linear Algebra | 3 |
| | 16 | | 14 |

## JUNIOR YEAR

| First Semester | Credits | Second Semester | Credits |
|---|---|---|---|
| CSE 4701 – Principals of Databases | 3 | CSE 4502 – Big Data Analytics | 3 |
| CSE 4820 – Intro to Machine Learning | 3 | CSE 3000 - Contemporary Issues in CSE | 1 |
| Data Science & Engineering elective course 1 | 3 | CSE Elective course 2 | 3 |
| PHIL 1104 (Area 1) – Phil. and Soc Ethics | 3 | CSE Elective course 2 | 3 |
| Elective | 3 | Area 4 (Diversity and Multiculturalism) | 3 |
| | 15 | Elective | 3 |
| | | | 16 |

## SENIOR YEAR

| First Semester | Credits | Second Semester | Credits |
|---|---|---|---|
| CSE 4939W - Design Project I | 3 | CSE 4940 - Design Project II | 3 |
| Data Science & Engineering elective course 3 | 3 | Data Science & Engineering elective course 4 | 3 |
| Area 4 (Diversity and Multiculturalism) | 3 | Elective | 3 |
| Elective | 3 | Elective[6] | 5 |
| Elective | 3 | | 14 |
| | 15 | | |

**Additionally the program must include 1) one W course other than CSE 4939W, which may be used to satisfy other requirements or Free Electives, and 2) one E course of at least three credits in Environmental Literacy.**

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[1] A two-course sequence must be selected from one of the following sequences: CHEM 1127Q–1128Q; CHEM 1137Q–1138Q; CHEM 1147Q–1148Q; PHYS 1401Q–1402Q; PHYS 1501Q–1502Q; or PHYS 1601Q–1602Q. One additional science course must be selected from the the department not selected for the two-course sequence or from BIOL 1107, BIOL 1108, BIOL 1110, ERTH 1050, or ERTH 1051 and 1052