

Big Data Concentration

FALL

SPRING

| Course number | Course Title | UAP | CR | Min Grade | Grade | Course Number | Course Title | USP | CR | Min Grade | Grade |
|----------------------|---|-----|----|-----------|-------|-------------------------------------|-------------------------------------|-----|----|-----------|-------|
| FRESHMAN YEAR | | | | | | | | | | | |
| COSC 1010 | Intro to Comp Science | | 4 | C | | COSC 1030 | Computer Science I | | 4 | C | |
| | | | | | | <i>Prerequisite: C in COSC 1010</i> | | | | | |
| MATH 2200 | Calculus I | Q | 4 | C | | MATH 2205 | Calculus II | Q | 4 | C | |
| | <i>Prerequisite: C in Math 1405 or 1450, MPE 5, Math ACT 27, Math SAT 640</i> | | | | | | <i>Prerequisite: C in Math 2200</i> | | | | |
| | Science Elective- see list | PN | 4 | D | | | Science Elective- see list | PN | 4 | D | |
| | USP: First Year Seminar | FYS | 3 | C | | | USP: Communications I | C1 | 3 | C | |
| Total | | | 15 | | | Total | | | 15 | | |

SOPHOMORE YEAR

| | | | | | | | | | | | |
|--------------|---|---|----|---|--|--------------|---|----|----|---|--|
| COSC 2150 | Computer Organization | | 3 | C | | COSC 3011 | Intro to Software Design | | 3 | C | |
| | <i>Prerequisite: C in COSC 1030</i> | | | | | | <i>Prerequisite: C in COSC 2030</i> | | | | |
| COSC 2030 | Computer Science II | | 4 | C | | COSC 3020 | Alg & Data Structures | | 4 | C | |
| | <i>Prerequisite: C in COSC 1030</i> | | | | | | <i>Prerequisite: C in COSC 2030 and COSC 2300</i> | | | | |
| COSC 2300 | Discrete Structures | | 3 | C | | MATH 2250 | Elementary Linear | | 3 | C | |
| | <i>Prerequisite: C in COSC 1030 and MATH 2200</i> | | | | | | <i>Prerequisite: C in Math 2200 or Math 2350</i> | | | | |
| | USP: Human Culture | H | 3 | D | | | USP: Human Culture | H | 3 | D | |
| One of: | STAT 2050 or STAT 2070 | | 4 | C | | | USP: Communications II | C2 | 3 | C | |
| | <i>Prerequisite: C in MATH 1400</i> | | | | | | <i>Prerequisite: C in C1</i> | | | | |
| Total | | | 17 | | | Total | | | 16 | | |

JUNIOR YEAR

| | | | | | | | | | | | |
|--------------|---|--|----|---|--|--------------|--|--|----|---|--|
| COSC 3015 | Functional Programming | | 3 | C | | COSC 3050 | Ethics for Computer Prof | | 1 | C | |
| | <i>Prerequisite: C in COSC 2030 and COSC 2300</i> | | | | | | <i>Prerequisite: Junior Standing, COSC Major</i> | | | | |
| COSC 4550 | Intro to Artificial Intelligence | | 3 | C | | COSC 4570 | Data Mining | | 3 | C | |
| | <i>Prerequisite: C in COSC 3020</i> | | | | | | <i>Prerequisite: C in COSC 4550</i> | | | | |
| | General Elective I | | 3 | C | | COSC | Theory Course (4100 or 4200) | | 3 | C | |
| | | | | | | | <i>Prerequisite: C in COSC 3020</i> | | | | |
| COSC | O/S Course (3750 or 4740) | | 3 | C | | COSC | Systems Course (4760 or 4820) | | 3 | C | |
| | <i>Prerequisite: Varies</i> | | | | | | <i>Prerequisite:</i> | | | | |
| STAT 3050 | Statistical Methods (M/S Elec I) | | 3 | C | | | STAT Minor Course(M/S Elec II) | | 3 | C | |
| | <i>Prerequisite: C in STAT 2050 or STAT 2070</i> | | | | | | | | | | |
| | | | | | | | General Elective II | | 3 | C | |
| Total | | | 15 | | | Total | | | 16 | | |

SENIOR YEAR

| | | | | | | | | | | | |
|--------------|---|----|----|---|--|--------------|-------------------------------------|--|----|---|--|
| COSC 4950 | Senior Design I | | 1 | C | | COSC 4955 | Senior Design II | | 2 | C | |
| | <i>Prerequisite: C in COSC 3011 and COSC 3020</i> | | | | | | <i>Prerequisite: C in COSC 4950</i> | | | | |
| COSC | Prog. Lang Course (4785 or 4780) | | 3 | D | | COSC 4555 | Machine Learning | | 3 | C | |
| | <i>Prerequisite: Varies</i> | | | | | | <i>Prerequisite: C in COSC 3020</i> | | | | |
| COSC 4450 | Computer Graphics | | 3 | C | | | STAT Minor Course | | 3 | C | |
| | <i>Prerequisite: C in COSC 3020 and MATH 2250</i> | | | | | | | | | | |
| | USP: Communications III | C3 | 3 | C | | | STAT Minor Course | | 3 | C | |
| | <i>Prerequisite: C in C2</i> | | | | | | | | | | |
| | USP: US & Wyo Const. | V | 3 | D | | | General Elective III | | 3 | C | |
| Total | | | 13 | | | Total | | | 14 | | |

Fall only or spring only course

Total Program Credits: 121

- A minimum of 120 hours is required. A minimum of 42 hours must be upper division. A minimum of 30 hours must be math/science.
- All COSC, MATH and STAT courses require a minimum grade of C.
- Students must simultaneously complete a Minor in Statistics
- General Electives cannot meet any other requirement for the major, and should be select to satisfy the 42-credit upper division requirement.
- Math/Science Electives must be selected with advisor's approval from Department list. Science courses must have a lab. Math courses must be at or above MATH 2205 or STAT 3000. Cannot count MATH 2350, MATH 2355, MTH 4000, STAT 4220 or any variable credit course. Four hours of Math/Science Electives are required. Two 3-credit STAT courses can also be used.
- Courses for requirements with options (Programming Language, Theory, O/S) are offered in alternating semesters. See your advisor for clarification.
- Degree candidates must meet the academic requirements of the university.
- Students may not take a course for S/U credit to satisfy any requirement for a degree from the College of Engineering and Applied Science, unless the course is offered for S/U credit only.
- O/S, Theory, and Prog. Lang Course options are offered in alternating semesters. See advisor for information.