

Major Requirements: Software Development Emphasis

Course Number and Description	Credits
<input type="checkbox"/> CS 1400 Introduction to Computer Science—CS 1 (F,Sp,Su)	3
<input type="checkbox"/> CS 1405 Introduction to Computer Science—CS 1 Lab (F,Sp,Su)	1
<input type="checkbox"/> CS 1410 (QI) Introduction to Computer Science—CS 2 (F,Sp,Su)	3
<i>One of the following two options:</i>	6
<input type="checkbox"/> CS 2410 Introduction to GUIs in Java (F,Sp) (3 cr) <i>and</i>	
<input type="checkbox"/> CS 2610 Developing Dynamic, Database-driven Web Applications (F,Sp) (3 cr)	
<i>or</i>	
<input type="checkbox"/> CS 2412 Introduction to GUIs in C# (F,Sp) (3 cr) <i>and</i>	
<input type="checkbox"/> CS 2612 Web Applications in ASP.NET (F,Sp) (3 cr)	
<input type="checkbox"/> CS 2420 (QI) Algorithms and Data Structures—CS 3 (F,Sp,Su)	3
<input type="checkbox"/> CS 3000 Undergraduate Seminar (F,Sp)	1
<input type="checkbox"/> CS 3100 Operating Systems and Concurrency (F,Sp)	3
<input type="checkbox"/> CS 3430 Python and Perl Programming (Sp) (3 cr)	3
<input type="checkbox"/> CS 3450 (CI) Introduction to Software Engineering (F,Sp)	3
<input type="checkbox"/> CS 3810 Computer Systems Organization and Architecture II (Sp)	3
<input type="checkbox"/> CS 4700 Programming Languages (F,Sp)	3
<input type="checkbox"/> CS 5050 Advanced Algorithms (F,Sp)	3
<input type="checkbox"/> CS 5700 O-O Software Development (Sp)	3
<input type="checkbox"/> CS 5800 Database Systems (F)	3
<input type="checkbox"/> MATH 1210 Σ (QL) Calculus I (F,Sp,Su)	4
<input type="checkbox"/> MATH 1220 Σ (QL) Calculus II (F,Sp,Su).4	4
<input type="checkbox"/> MATH 3310 Σ Discrete Mathematics (F,Sp)	3
<input type="checkbox"/> STAT 2300 Σ (QI) Business Statistics (F,Sp,Su)	4
<i>One of the following 3 courses:</i>	3
<input type="checkbox"/> PHIL 1120 (BHU) Social Ethics (F) (3 cr) or	
<input type="checkbox"/> PHIL 2400 (BHU) Ethics (Sp) (3 cr) or	
<input type="checkbox"/> PHIL 3520 (DHA) Business Ethics (Sp) (3 cr)	
<i>One of the following 3 courses:</i>	3
<input type="checkbox"/> CMST 3250 (CI) Organizational Communication (3 cr) or	
<input type="checkbox"/> ENGL 3080 (CI) Introduction to Technical Communication (F,Sp) (3 cr) or	
<input type="checkbox"/> MIS 3200 (CI) Business Communication (F,Sp,Su) (3 cr)	
<input type="checkbox"/> ECN 1500 (BAI) Intro to Economic Institutions, History, and Principles (F,Sp,Su)	3
<input type="checkbox"/> MGT 3110 (DSS) Managing Organizations and People (F,Sp,Su)	3
<input type="checkbox"/> MGT 3700 Σ Operations Management (F,Sp,Su)	3
<i>Select 3 credits from the following courses. Students may also use courses from the list of CS 5000-level electives that are not otherwise used to fill major requirements.</i>	3
<input type="checkbox"/> CS 3200 Mobile Application Development (F,Sp) (3 cr)	
<input type="checkbox"/> CS 4250 Cooperative Work Experience (F,Sp,Su) (1-9 cr)	
<input type="checkbox"/> CS 4720 Computer Networking 1 (F,Sp) (3 cr)	
<input type="checkbox"/> CS 4950 Undergraduate Research (F,Sp,Su) (3 cr)	
<input type="checkbox"/> Advisor-approved course	

Select at least 7 credits from the following courses. At least one course must be a 4-credit course. With advisor approval, students may also take CS 6000-level courses to fill this requirement.

- CS 5000** Theory of Computation (Sp) (3 cr)
- CS 5100** Graphical User & Interfaces (GUIs) (Sp) (4 cr)
- CS 5200** Distributed & Network Programming (F) (4 cr)
- CS 5300** Compiler Construction (F) (4 cr)
- CS 5400** Computer Graphics I (F) (4 cr)
- CS 5410** Game Development (Sp) (4 cr)
- CS 5450** Multimedia Systems (Sp) (3)
- CS 5460** Computer Security I (F) (3 cr)
- CS 5500** Parallel Algorithms (Sp) (3 cr)
- CS 5600** AI: Problem Solving & Expert Systems (F) (4 cr)
- CS 5650** AI: Pattern Analysis & Machine Intelligence (F) (3 cr)
- CS 5850** Systems Analysis (Sp) (3 cr)
- CS 5890** Topics in Computer Science (F,Sp,Su) (3 cr)
- CS 5950** Undergraduate Research (F,Sp,Su) (3 cr)

Two-Semester Science Sequence

8-10

Complete one of the following two-semester sequences:

- BIOL 1610 S-Q** Biology I (4 cr) and **BIOL 1620 S-Q (BLS)** Biology II (4 cr)
- CHEM 1210 S-Q** Principles of Chemistry I (F,Sp) (4 cr) & **CHEM 1215** Chem. Principles Lab I (F,Sp) (1 cr) and **CHEM 1220 S-Q (BPS)** Principles of Chemistry II (F,Sp) (4 cr) and **CHEM 1225 S-Q** Chem. Principles Lab II (F,Sp) (1 cr).
- GEO 1110 S-Q (BPS)** The Dynamic Earth: Physical Geology (4 cr) and **GEO 3200 S-Q (DSC)** The Earth Through Time (4 cr)
- PHYS 2210 S-Q** General Physics I (4 cr) & **PHYS 2215** Physics Lab I (1) and **PHYS 2220 S-Q (BPS)** General Physics II (4 cr) & **PHYS 2225** Gen'l Physics Lab II (1 cr)

Science and Quantitative Requirement

1-4

In their curriculum, students in the science emphasis must have a total of 30 credits of science and quantitative requirements, such that the 30 credits include the following: (1) a two-semester science sequence (see subsection entitled **Two-Semester Science Sequence** above), and (2) at least 15 credits of quantitative coursework, which are met with courses designated with a sigma Σ . The remaining courses can be met with any combination of the following:

1. Courses designated with a sigma Σ that are not otherwise used to fill software development emphasis requirements. This includes courses so designated in other emphases.
2. Courses designated with an **S-Q** (for science/quantitative) that are not otherwise used to fill software development emphasis requirements. This includes courses so designated in other emphases.
3. Any of the following courses:
 - BIOL 2220 S-Q** General Ecology (F,Sp) (3 cr)
 - BIOL 3060 S-Q (QI)** Principles of Genetics (F,Sp,Su) (3 cr)
 - CHEM 2310 S-Q** Organic Chemistry I (F) (4 cr)
 - CHEM 3060 S-Q (QI)** Physical Chemistry (F) (3 cr)
 - GEO 3500 S-Q** Minerals and Rocks (Sp) (4 cr)
 - PHYS 2500 S-Q** Introduction to Computer Methods in Physics (2 cr)
 - PHYS 2710 S-Q** Introductory Modern Physics (3 cr)
 - PHYS 4010 S-Q (DSC/QI)** Chaos Under Control (3 cr)
 - USU 1350 S-Q (BLS)** Integrated Life Science (F,Sp,Su) (3 cr)
 - USU 1360 S-Q (BPS)** Integrated Physical Science (3 cr)
4. Other advisor-approved mathematics or science course.