

Major Requirements: Digital Systems 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 3450 (CI) Introduction to Software Engineering (F,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"/> MATH 1210 Σ (QL) Calculus I (F,Sp,Su)	4
<input type="checkbox"/> MATH 1220 Σ (QL) Calculus II (F,Sp,Su).4	4
<i>One of the following two options:</i>	4-6
<input type="checkbox"/> MATH 2250 Σ (QI) Linear Algebra and Differential Equations (F,Sp,Su) (4 cr)	
<i>or</i>	
<input type="checkbox"/> MATH 2270 Σ (QI) Linear Algebra (3 cr) <i>and</i>	
<input type="checkbox"/> MATH 2280 (QI) Ordinary Differential Equations (3 cr)	
<input type="checkbox"/> MATH 3310 Σ Discrete Mathematics (F,Sp)	3
<input type="checkbox"/> STAT 3000 Σ (QI) Statistics for Scientists (F,Sp,Su)	3
<input type="checkbox"/> ECE 2250 Electrical Circuits I (F)	4
<input type="checkbox"/> ECE 2290 Electrical Circuits II (Sp)	3
<input type="checkbox"/> ECE 2700 Digital Circuits (F,Sp)	4
<input type="checkbox"/> ECE 3710 Microcontroller Hardware and Software (Sp)	4
<i>One of the following 3 courses:</i>	3
<input type="checkbox"/> PHIL 1120 (BHU) Social Ethics (F) (3 cr) <i>or</i>	
<input type="checkbox"/> PHIL 2400 (BHU) Ethics (Sp) (3 cr) <i>or</i>	
<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) Organization Communication (F,Sp) (3 cr) <i>or</i>	
<input type="checkbox"/> ENGL 3080 (CI) Introduction to Technical Communication (F,Sp) (3 cr) <i>or</i>	
<input type="checkbox"/> MIS 3200 (CI) Business Communication (F,Sp,Su) (3 cr)	
<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 3430 Python and Perl Programming (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	

<p>Select 13 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.</p> <ul style="list-style-type: none"> <input type="checkbox"/> CS 5000 Theory of Computation (Sp) (3 cr) <input type="checkbox"/> CS 5100 Graphical User & Interfaces (GUIs) (Sp) (4 cr) <input type="checkbox"/> CS 5200 Distributed & Network Programming (F) (4 cr) <input type="checkbox"/> CS 5300 Compiler Construction (F) (4 cr) <input type="checkbox"/> CS 5400 Computer Graphics I (F) (4 cr) <input type="checkbox"/> CS 5410 Game Development (Sp) (4 cr) <input type="checkbox"/> CS 5450 Multimedia Systems (Sp) (3) <input type="checkbox"/> CS 5460 Computer Security I (F) (3 cr) <input type="checkbox"/> CS 5500 Parallel Algorithms (Sp) (3 cr) <input type="checkbox"/> CS 5600 AI: Problem Solving & Expert Systems (F) (4 cr) <input type="checkbox"/> CS 5650 AI: Pattern Analysis & Machine Intelligence (F) (3 cr) <input type="checkbox"/> CS 5700 O-O Software Development (Sp) (3 cr) <input type="checkbox"/> CS 5800 Database Systems (F) (3 cr) <input type="checkbox"/> CS 5850 Systems Analysis (Sp) (3 cr) <input type="checkbox"/> CS 5890 Topics in Computer Science (F,Sp,Su) (3 cr) <input type="checkbox"/> CS 5950 Undergraduate Research (F,Sp,Su) (3 cr) <input type="checkbox"/> Advisor-approved course 	13
<p>Two-Semester Science Sequence</p> <ul style="list-style-type: none"> <input type="checkbox"/> PHYS 2210 S-Q General Physics I (4 cr) & PHYS 2215 General Physics Lab I (1) <i>and</i> PHYS 2220 S-Q (BPS) General Physics II (4 cr) & PHYS 2225 General Physics Lab II (1 cr) 	10
<p>Science and Quantitative Requirement</p> <p>In their curriculum, students in the digital systems 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:</p> <ol style="list-style-type: none"> 1. Courses designated with a sigma Σ that are not otherwise used to fill digital systems 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 digital systems emphasis requirements. This includes courses so designated in other emphases. 3. Any approved course as listed in the General Catalog at http://catalog.usu.edu/preview_program.php?catoid=4&poid=1619&returnto=681 4. Other advisor-approved mathematics or science course. 	2-4