## University Core Requirements

### Religion Cornerstones
- Teachings and Doctrine of The Book of Mormon: 1 class, 2.0 hours<br>- Jesus Christ and the Everlasting Gospel: 1 class, 2.0 hours<br>- Foundations of the Restoration: 1 class, 2.0 hours<br>- The Eternal Family: 1 class, 2.0 hours

### The Individual and Society
- American Heritage: 1-2 classes, 3-6.0 hours from approved list<br>- Global and Cultural Awareness: 1 class, 3.0 hours from approved list

### Skills
- First Year Writing: 1 class, 3.0 hours from approved list<br>- Advanced Written and Oral Communications: 1 class, 3.0 hours WRTG 316<br>- Quantitative Reasoning: 1 class, 4.0 hours MATH 112 or 113*<br>- Languages of Learning (Math or Language): 1 class, 4.0 hours MATH 112 or 113*

### Arts, Letters, and Sciences
- Civilization 1: 1 class, 3.0 hours from approved list<br>- Civilization 2: 1 class, 3.0 hours from approved list<br>- Arts: 1 class, 3.0 hours from approved list<br>- Letters: 1 class, 3.0 hours from approved list<br>- Physical Science: 1 class, 3.0 hours from approved list<br>- Social Science: 1 class, 3.0 hours from approved list

### Core Enrichment: Electives
- Religion Electives: 3-4 classes, 6.0 hours from approved list<br>- Open Electives: Variable hours, personal choice

## Graduation Requirements
- Minimum residence hours required: 30.0<br>- Minimum hours needed to graduate: 120.0

## Suggested Sequence of Courses

### FRESHMAN YEAR
- 1st Semester:
  - CS 142: 3.0 hours<br>  - First-year Writing or American Heritage: 3.0 hours<br>  - MATH 112: 4.0 hours<br>  - Religion Cornerstone course: 2.0 hours<br>  - General education, university requirements, and/or general electives: 3.0 hours<br>  - Total Hours: 15.0 hours<br>- 2nd Semester:
  - CS 202: 1.0 hours<br>  - CS 235: 3.0 hours<br>  - PHSCS 121: 3.0 hours<br>  - First-year Writing or American Heritage: 3.0 hours<br>  - MATH 113: 4.0 hours<br>  - Religion Cornerstone course: 2.0 hours<br>  - Total Hours: 16.0 hours

### SOPHOMORE YEAR
- 3rd Semester:
  - CS 203: 1.0 hours<br>  - CS 224: 3.0 hours<br>  - CS 236: 3.0 hours<br>  - Biological Science: 3.0 hours<br>  - Civilization 1: 3.0 hours<br>  - Religion Cornerstone course: 2.0 hours<br>  - Total Hours: 15.0 hours<br>- 4th Semester:
  - CS 240: 4.0 hours<br>  - CS 260 or other CS elective: 3.0 hours<br>  - MATH 213: 2.0 hours<br>  - MATH 215: 1.0 hours<br>  - Civilization 2: 3.0 hours<br>  - Religion Cornerstone course: 2.0 hours<br>  - Total Hours: 15.0 hours

### JUNIOR YEAR
- 5th Semester:
  - CS 204: 1.0 hours<br>  - CS 312: 3.0 hours<br>  - CS 324: 3.0 hours<br>  - Social Science: 3.0 hours<br>  - STAT 121, STAT 201, or MATH 431: 3.0 hours<br>  - Religion Elective: 2.0 hours<br>  - Total Hours: 15.0 hours<br>- 6th Semester:
  - CS 329: 3.0 hours<br>  - CS 340: 3.0 hours<br>  - CS 452: 3.0 hours<br>  - Letters: 3.0 hours<br>  - Religion Elective: 2.0 hours<br>  - Total Hours: 14.0 hours

### SENIOR YEAR
- 7th Semester:
  - CS 480: 3.0 hours<br>  - CS Elective: 3.0 hours<br>  - WRTG 316: 3.0 hours<br>  - Arts: 3.0 hours<br>  - Religion Elective: 2.0 hours<br>  - General education, university requirements, and/or general electives: 2.0 hours<br>  - Total Hours: 16.0 hours<br>- 8th Semester:
  - CS 481: 3.0 hours<br>  - CS Elective: 3.0 hours<br>  - CS Elective: 3.0 hours<br>  - Letters: 3.0 hours<br>  - Religion Elective: 2.0 hours<br>  - Global and Cultural Awareness: 3.0 hours<br>  - Total Hours: 14.0 hours
**Grades below C- are not allowed in major courses.**

**REQUIREMENT 1 Complete 16 courses**

**CORE COURSES:**
- C S 453 - Introduction to User Interface Software
- C S 460 - Computer Communications and Networking
- C S 462 - Large-Scale Distributed System Design
- C S 465 - Computer Security
- C S 466 - Verification and Validation

**SUPPORTING COURSES:**
- MATH 112 - Fundamentals of Information Retrieval
- MATH 213 - Designing the User Experience
- MATH 312 - Concepts of Programming Languages
- MATH 411 - Web Programming
- MATH 455 - Operating Systems Design
- MATH 456 - Interactive Graphics and Image Processing
- MATH 457 - Designing the User Experience
- MATH 461 - Advanced Algorithms and Problem Solving
- MATH 401R - Topics in Computer Science
- MATH 486 - Software Engineering Capstone 2
- MATH 485 - Software Engineering Lab 3
- MATH 484 - Software Engineering Lab 2
- MATH 483 - Software Engineering Lab 1
- MATH 482 - Introduction to Computer Programming

**OPTION 3.2 Complete 2 courses**
- MATH 215 - Computational Linear Algebra

**REQUIREMENT 2 Complete 4 courses**

**SUPPORTING COURSES:**
- MATH 113 - Calculus 2
- PHSCS 121 - Introduction to Newtonian Mechanics
- WRTG 316 - Technical Communication

**REQUIREMENT 3 Complete 1 option**

**OPTION 3.1 Complete 1 course**
- MATH 313 - (Not currently offered)

**OPTION 3.2 Complete 2 courses**
- MATH 213 - Elementary Linear Algebra
- MATH 215 - Computational Linear Algebra

**REQUIREMENT 4 Complete 1 course**
- STAT 121 - Principles of Statistics
- STAT 201 - Statistics for Engineers and Scientists

**REQUIREMENT 5 Complete 2 courses**
- C S 260 - Web Programming
- C S 330 - Concepts of Programming Languages
- C S 345 - Operating Systems Design
- C S 356 - Designing the User Experience
- C S 453 - Fundamentals of Information Retrieval

**REQUIREMENT 6 Complete 2 courses**

**COURSES WILL NOT DOUBLE COUNT BETWEEN REQUIREMENT 5 AND REQUIREMENT 6.**

- C S 252 - Introduction to Computational Theory
- C S 260 - Web Programming
- C S 330 - Concepts of Programming Languages
- C S 345 - Operating Systems Design
- C S 355 - Interactive Graphics and Image Processing
- C S 356 - Designing the User Experience
- C S 393 - Advanced Algorithms and Problem Solving
- C S 401R - Topics in Computer Science
- C S 405 - Creating and Managing a Software Business
- C S 412 - Linear Programming and Convex Optimization
- C S 450 - Computer Vision
- C S 453 - Fundamentals of Information Retrieval
- C S 455 - Computer Graphics
- C S 456 - Introduction to User Interface Software
- C S 460 - Computer Communications and Networking
- C S 462 - Large-Scale Distributed System Design
- C S 465 - Computer Security
- C S 470 - Introduction to Artificial Intelligence
- C S 471 - Voice User Interfaces
- C S 472 - Introduction to Machine Learning
- C S 474 - Introduction to Deep Learning
- C S 486 - Verification and Validation
- C S 493R - Computing Competitions
- C S 497R - Undergraduate Research
- C S 498R - Undergraduate Special Projects
- C S 501R - Advanced Topics in Computer Science
- C S 513 - Robust Control

**REQUIREMENT 7**

Complete Senior Exit interview with the C S department during last semester or term.

**Note:** If C S 493R, C S 498R, or C S 501R is chosen, it must be taken for 3 credit hours.

**MAP DISCLAIMER**

While every reasonable effort is made to ensure accuracy, there are some student populations that could have exceptions to listed requirements. Please refer to the university catalog and your college advisement center/department for complete guidelines.

**DEPARTMENT INFORMATION**

Computer Science Department
Brigham Young University
3361 Talmage Building
Provo, UT 84602
Telephone: (801) 422-3027

**ADVICEMENT CENTER INFORMATION**

Physical and Mathematical Sciences College Advisement Center
Brigham Young University
N-181 ESC
Provo, UT 84602
Telephone: (801) 422-2674