UNIVERSITY CORE AND GRADUATION REQUIREMENTS

UNIVERSITY CORE REQUIREMENTS

<table>
<thead>
<tr>
<th>Requirements</th>
<th>#Classes</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Doctrinal Foundation</td>
<td>2</td>
<td>4.0</td>
<td>Rel A 121/H and 122/H</td>
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<tr>
<td>C S 142 Introduction to Computer Programming</td>
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<td>C S 224 Introduction to Computer Systems</td>
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<td>C S 235 Data Structures and Algorithms</td>
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<td>C S 236 Discrete Structures</td>
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<td>C S 240 Advanced Programming Concepts</td>
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<td>C S 252 Introduction to Computational Theory</td>
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<td>C S 312* Algorithm Design &amp; Analysis</td>
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<tr>
<td>C S 340 Software Design and Testing</td>
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<tr>
<td>C S 404 Ethics and Computers in Society</td>
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<tr>
<td>Arts, Letters, and Sciences</td>
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<tr>
<td>C S 345 Operating Systems Design</td>
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<td>C S 360 Internet Programming</td>
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<tr>
<td>C S 316* Technical Communication</td>
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<tr>
<td>Math 112* Calculus 1</td>
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<td>Math 113* Calculus 2</td>
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<td>Math 313 Elementary Linear Algebra</td>
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<td>Phscs 121* Intro to Newtonian Mechanics</td>
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<td>C S 211 Principles of Statistics</td>
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<td>C S 201 Statistics for Engineers &amp; Scientists</td>
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<td>C S 256 Designing the User Experience</td>
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<td>C S 330 Concepts of Programming Languages</td>
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<td>C S 354 Operating Systems Design</td>
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<td>C S 355 Interactive Graphics &amp; Image Processing</td>
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<td>C S 360 Internet Programming</td>
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<td>C S 401R Topics in Computer Science</td>
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<td>C S 412 Linear Prog.Convex Optimization</td>
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<td>C S 418 Bioinformatics</td>
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<td>C S 428 Software Engineering</td>
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<td>C S 431 Algorithmic Languages and Compilers</td>
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<td>C S 450 Intro to Digital Signal &amp; Image Processing</td>
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<td>C S 452 Database Modeling Concepts</td>
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<td>C S 453 Fundamentals of Information Retrieval</td>
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<td>C S 455 Computer Graphics</td>
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<td>C S 456 Introduction to User Interface Software</td>
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<td>C S 460 Computer Communications &amp; Networking</td>
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Note: Grades below C- are not allowed in major courses. Hours of credit applied toward the major must be taken within 8 years of declaring the major. Any exceptions must be approved by the department. Students must choose to graduate under later requirements by updating their date of entry into the major at the college advisement center.

PROGRAM REQUIREMENTS (74-77 total hours)

For students entering the degree program during the 2014–2015 curricular year.
**Suggested Sequence of Courses:**

### FRESHMAN YEAR

**1st Semester**
- C S 142 (FWSpSu) 3.0
- 1st Year Writing 3.0
- or A Htg 100 (3.0)
- Math 112 (FWSpSu) 4.0
- General Elective 3.0
- Rel A 121 (FWSpSu) 2.0
- **Total Hours** 15.0

### 2nd Semester
- C S 224 (FWSpSu) 3.0
- or 1st Year Writing (3.0)
- Math 113 (FWSpSu) 4.0
- Rel A 122 (FWSpSu) 2.0
- **Total Hours** 15.0

### SOPHOMORE YEAR

**3rd Semester**
- C S 235 (FWSpSu) 3.0
- Civ. 1 3.0
- Stat 121 or 201 (FWSpSu) 3.0
- Phscs 121 (FWSpSu) 3.0
- Rel A 211 or 212 (FWSpSu) 2.0
- **Total Hours** 14.0

**4th Semester**
- C S 240 (FWSu) 4.0
- C S 252 (FW, alt. terms) 3.0
- Biological Science 3.0
- Math 313 (FWSpSu) 3.0
- Rel C 324 or 325 2.0
- **Total Hours** 15.0

### JUNIOR YEAR

**5th Semester**
- C S 312 (FWSp) 3.0
- C S 340 (FW) 3.0
- C S 345 (FWSpSu) or CS 360 3.0
- Engl 316 (FWSpSu) 3.0
- Religion Elective 2.0
- **Total Hours** 15.0

### 6th Semester
- Computer Science Elective 3.0
- Computer Science Elective 3.0
- C S 404 (FW) 2.0
- Computer Science Elective 3.0
- Letters 3.0
- Religion Elective 2.0
- **Total Hours** 16.0

### SENIOR YEAR

**7th Semester**
- Computer Science Elective 3.0
- Computer Science Elective 3.0
- C S 340 (FW) 3.0
- Arts 3.0
- Religion Elective 2.0
- **Total Hours** 15.0

**8th Semester**
- CS/Math/Science Elective 3.0
- Computer Science Elective 3.0
- Civilization 2 3.0
- Global and Cultural Awareness 3.0
- Social Science 3.0
- **Total Hours** 15.0

### SENIOR YEAR

**7th Semester**
- Computer Science Elective 3.0
- Computer Science Elective 3.0
- Computer Science Elective 3.0
- Arts 3.0
- Religion Elective 2.0
- **Total Hours** 15.0

**8th Semester**
- CS/Math/Science Elective 3.0
- Computer Science Elective 3.0
- Civilization 2 3.0
- Global and Cultural Awareness 3.0
- Social Science 3.0
- **Total Hours** 15.0

**Note:** The sequence of courses suggested may not fit the circumstances of every student. Students should contact their college advisement center for help in outlining an efficient schedule.

**Note 2:** Students are encouraged to complete an average of 15 credit hours each semester or 30 credit hours each year, which could include spring and/or summer terms. Taking fewer credits substantially increases the cost and the number of semesters to graduate.

### THE DISCIPLINE:

Computer science touches virtually every area of human endeavor. Software is responsible for everything from the control of kitchen appliances to sophisticated climate models used in predicting future environmental change. Students in computer science learn to approach complex problems in business, science, and entertainment using their strong background in mathematics, algorithms, and data structures.

The degree programs in the Computer Science Department prepare students to be confident software developers and technical problem solvers. The curriculum also trains students for research into new avenues where computers will have a significant impact.

The BS curriculum is accredited by the Computing Accreditation Commission of ABET.

### CAREER OPPORTUNITIES:

Graduates pursue exciting opportunities in graphics, artificial intelligence, software engineering, database design, scientific programming, systems administration, and research at universities and national laboratories.

Students completing the animation emphasis will be prepared for technical positions at animation and game programming studios. Students will learn both the technical and artistic side of creating and implementing digital animations and games.

The bioinformatics emphasis is designed for students who are interested in building software to assist in analyzing biological systems.

Students will graduate with a significant background in biology coupled with the software development and analysis skills necessary to implement large bioinformatics applications.

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**Computer Science Department**

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