# B.S. in Computer Science

## First Year

### 1st Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Term Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 100</td>
<td>Roadmap to Computing</td>
<td>3</td>
</tr>
<tr>
<td>MATH 111</td>
<td>Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>HUM 101</td>
<td>English Composition: Writing, Speaking, Thinking I</td>
<td>3</td>
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<tr>
<td>PHYS 111</td>
<td>Physics I</td>
<td>3</td>
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<tr>
<td>PHYS 111A</td>
<td>Physics I Laboratory</td>
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<tr>
<td>CS 107</td>
<td>Computing as a Career</td>
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**Term Credits**: 15

### 2nd Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>CS 113</td>
<td>Introduction to Computer Science</td>
<td>3</td>
</tr>
<tr>
<td>MATH 112</td>
<td>Calculus II</td>
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<tr>
<td>HUM 102</td>
<td>English Composition: Writing, Speaking, Thinking II</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 121</td>
<td>Physics II</td>
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<td>PHYS 121A</td>
<td>Physics II Laboratory</td>
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<tr>
<td>社科 (lower-level) Elective</td>
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**Term Credits**: 17

## Second Year

### 1st Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Term Credits</th>
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</thead>
<tbody>
<tr>
<td>CS 114</td>
<td>Introduction to Computer Science II</td>
<td>3</td>
</tr>
<tr>
<td>CS 252</td>
<td>Computer Organization and Architecture</td>
<td>3</td>
</tr>
<tr>
<td>MATH 333</td>
<td>Probability and Statistics</td>
<td>3</td>
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<tr>
<td>社科 + Lab Elective</td>
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<td>4</td>
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<td>Select one of the following:</td>
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<tr>
<td>HUM 211</td>
<td>The Pre-Modern World</td>
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<td>HUM 212</td>
<td>The Modern World</td>
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</tr>
<tr>
<td>HIST 213</td>
<td>The Twentieth-Century World</td>
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</tr>
<tr>
<td>Physical Education</td>
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**Term Credits**: 17

### 2nd Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Term Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 280</td>
<td>Programming Language Concepts</td>
<td>3</td>
</tr>
<tr>
<td>CS 332</td>
<td>Principles of Operating Systems</td>
<td>3</td>
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<tr>
<td>CS 241</td>
<td>Foundations of Computer Science I</td>
<td>3</td>
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<tr>
<td>Select one of the following:</td>
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<tr>
<td>ENG 340</td>
<td>Oral Presentations</td>
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<tr>
<td>ENG 352</td>
<td>Technical Writing</td>
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<td>General Elective:Lower</td>
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<tr>
<td>Physical Education</td>
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<tr>
<td>CS 207</td>
<td>Computing and Effective Communication</td>
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**Term Credits**: 17

## Third Year

### 1st Semester

<table>
<thead>
<tr>
<th>Course</th>
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<th>Term Credits</th>
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<tbody>
<tr>
<td>CS 341</td>
<td>Foundations of Computer Science II</td>
<td>3</td>
</tr>
<tr>
<td>IS 350</td>
<td>Computers, Society and Ethics</td>
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<tr>
<td>Interdisciplinary Elective</td>
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<td>3</td>
</tr>
<tr>
<td>Social Science (lower-level) Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>CS 288</td>
<td>Intensive Programming in Linux</td>
<td>3</td>
</tr>
<tr>
<td>CS 431</td>
<td>Database System Design and Management</td>
<td>3</td>
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**Term Credits**: 18
2nd Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CS 356</td>
<td>Introduction to Computer Networks</td>
<td>3</td>
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<tr>
<td>CS 407</td>
<td>Professional Development in Computing</td>
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<tr>
<td>CS/IS/IT Elective</td>
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<td>3</td>
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<tr>
<td>Math Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Interdisciplinary Elective</td>
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<td>3</td>
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<tr>
<td>Lower General Elective</td>
<td></td>
<td>3</td>
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<td><strong>Term Credits</strong></td>
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Fourth Year

1st Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CS 490</td>
<td>Guided Design in Software Engineering</td>
<td>3</td>
</tr>
<tr>
<td>CS 435</td>
<td>Advanced Data Structures and Algorithm Design</td>
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</tr>
<tr>
<td>Humanities and Social Sciences (Upper Level) Elective</td>
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<tr>
<td>Math Elective</td>
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<td>Select one of the following:</td>
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<tr>
<td>IE 492</td>
<td>Engineering Management</td>
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<td>MGMT 390</td>
<td>Principles of Management</td>
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<tr>
<td>HRM 301</td>
<td>Organizational Behavior</td>
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<tr>
<td>ENTR 410</td>
<td>New Venture Management</td>
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<tr>
<td><strong>Term Credits</strong></td>
<td></td>
<td><strong>15</strong></td>
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2nd Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 491</td>
<td>Senior Project</td>
<td>3</td>
</tr>
<tr>
<td>or IT 491</td>
<td>or IT Capstone Project</td>
<td></td>
</tr>
<tr>
<td>CS Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Capstone Seminar Humanities and Social Sciences (upper-level): GUR Elective</td>
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<td></td>
</tr>
<tr>
<td>Interdisciplinary Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Upper General Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td><strong>Term Credits</strong></td>
<td></td>
<td><strong>15</strong></td>
</tr>
</tbody>
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**Total Credits** 130

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2. Math Elective:
   If you took MATH 244 Introduction to Probability Theory, you must take MATH 341 Statistical Methods II.
   If you took MATH 333 Probability and Statistics, you may take any of the following:
   - MATH 211 Calculus III A
   - MATH 213 Calculus III B
   - MATH 222 Differential Equations
   or any Math 300/400 level except MATH 305 Statistics for Technology.

3. Interdisciplinary Elective: A sequence of three courses from mathematics, science, engineering or business. At least 1 300/400 level course. All others must be 200/300/400. Acct 115/117 is allowed for business. Please consult your advisor for appropriate interdisciplinary electives.

4. CS/IS/IT Elective: Two 300-/400-level CS/IS/IT electives as offered by the College of Computing Sciences. At least one must be in CS, excluding CS 310/410. Please consult your advisor regarding these COOP courses and their place in your curriculum.

5. General Upper and Lower Electives: A minimum of 3 courses (9 credits). Two of the three elective courses may be lower level (100-200) and one of these electives must be upper level (300-400) courses.

**Electives**

Prerequisite grade requirement for Computer Science majors:

Students are expected to earn a grade of B or better in CS 100. Students are expected to earn a grade of C or better in all CS courses that serve as prerequisites in a sequence of courses.

**Co-op**

A GPA of 2.7 is required to enroll in co-op. Students may use up to 6 credits of co-op toward their general elective requirements.

Refer to the [General University Requirements](#) for further information on electives.
This curriculum represents the maximum number of credits per semester for which a student is advised to register. A full-time credit load is 12 credits. First-year students are placed in a curriculum that positions them for success which may result in additional time needed to complete curriculum requirements. Continuing students should consult with their academic advisor to determine the appropriate credit load.