# B.S. in Computer Science

(121 credits minimum)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Year</strong></td>
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<tr>
<td><strong>1st Semester</strong></td>
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<tr>
<td>CS 100</td>
<td>Roadmap to Computing</td>
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<tr>
<td>MATH 111</td>
<td>Calculus I</td>
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<tr>
<td>HUM 101</td>
<td>English Composition: Writing, Speaking, Thinking I</td>
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<tr>
<td>PHYS 111</td>
<td>Physics I</td>
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<tr>
<td>PHYS 111A</td>
<td>Physics I Laboratory</td>
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<tr>
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<td>Computing as a Career or Freshman Seminar</td>
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<tr>
<td><strong>2nd Semester</strong></td>
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<tr>
<td>CS 113</td>
<td>Introduction to Computer Science</td>
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<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>
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<tr>
<td>PHYS 121</td>
<td>Physics II</td>
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<tr>
<td>PHYS 121A</td>
<td>Physics II Laboratory</td>
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<td><strong>Second Year</strong></td>
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<td><strong>1st Semester</strong></td>
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<tr>
<td>CS 114</td>
<td>Introduction to Computer Science II</td>
<td>3</td>
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<tr>
<td>CS 252</td>
<td>Computer Organization and Architecture</td>
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<tr>
<td>MATH 333</td>
<td>Probability and Statistics</td>
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<td>Science with Lab Elective (<a href="http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/natural-science-ger">http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/natural-science-ger</a>)</td>
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<tr>
<td>History and Humanities GER 200 level (<a href="http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-200-level">http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-200-level</a>)</td>
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<tr>
<td>CS 280</td>
<td>Programming Language Concepts</td>
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<tr>
<td>IS 350</td>
<td>Computers, Society and Ethics</td>
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<tr>
<td>CS 241</td>
<td>Foundations of Computer Science I</td>
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<td>Select one of the following:</td>
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<tr>
<td>ENG 340</td>
<td>Oral Presentations</td>
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<td>ENG 352</td>
<td>Technical Writing ¹</td>
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<td>General lower-level Elective ¹</td>
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<tr>
<td>YWCC 207</td>
<td>Computing &amp; Effective Com</td>
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<td><strong>Third Year</strong></td>
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<td><strong>1st Semester</strong></td>
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<tr>
<td>General lower-level Elective ¹</td>
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<td>CS 332</td>
<td>Principles of Operating Systems</td>
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<tr>
<td>CS 431</td>
<td>Database System Design and Management</td>
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<tr>
<td>Social Science GER (<a href="http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/social-science-ger">http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/social-science-ger</a>)</td>
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<tr>
<td>CS 288</td>
<td>Intensive Programming in Linux</td>
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<td>Term Credits</td>
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</table>
## 2nd Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CS 356</td>
<td>Introduction to Computer Networks</td>
<td>3</td>
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<tr>
<td>YWCC 307</td>
<td>Professional Dev in Computing</td>
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<tr>
<td>CS upper-level Elective 4</td>
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<tr>
<td>Math Elective 2</td>
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<tr>
<td>CS/IS/IT Elective 200 or above 3</td>
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<tr>
<td>CS 341</td>
<td>Foundations of Computer Science II</td>
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### Term Credits

**16**

## 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>
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<tr>
<td>CS 435</td>
<td>Advanced Data Structures and Algorithm Design</td>
<td>3</td>
</tr>
<tr>
<td>History and Humanities GER 300+ level</td>
<td>(<a href="http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-300-level">http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-300-level</a>)</td>
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<tr>
<td>Math or Science Elective</td>
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<tr>
<td>CS upper-level Elective 4</td>
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<td>3</td>
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### Term Credits

**15**

### 2nd Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CS 491</td>
<td>Senior Project</td>
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<tr>
<td>CS upper-level Elective 4</td>
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<tr>
<td>Humanities and Social Science Senior Seminar GER (<a href="http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/hss-capstone">http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/hss-capstone</a>)</td>
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<tr>
<td>General upper-level Elective 1</td>
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<tr>
<td>CS/IS/IT Elective 200 or above 3</td>
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</table>

### Term Credits

**15**

### Total Credits

**122**

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1. General Lower and Upper Electives: A minimum of 3 courses (9 credits minimum). Two of the three electives may be lower-level (100-200) and one must be upper-level (300-400) courses. Please consult your advisor for appropriate general electives.

2. Math Elective:
   - If you took MATH 244 (http://catalog.njit.edu/search/?P=MATH%20244) Introduction to Probability Theory you must take MATH 341 (http://catalog.njit.edu/search/?P=MATH%20341) Statistical Methods II.

3. CS/IS/IT Elective: Two 3 credit CS/IS/IT electives (200 level or above). At least one must be in CS (excluding CS 310/410).

4. CS upper-level Elective: CS course 300 level and above (excluding CS 310/410).

## 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 Education 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.