# B.S. in Computer Science

(120 credits minimum)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<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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<td>English Composition: Writing, Speaking, Thinking I</td>
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<td>PHYS 111</td>
<td>Physics I</td>
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<td>PHYS 111A</td>
<td>Physics I Lab</td>
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<td>CS 113</td>
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<tr>
<td>MATH 112</td>
<td>Calculus II</td>
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<td>Physics II</td>
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<td>PHYS 121A</td>
<td>Physics II Lab</td>
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<td><strong>Second Year</strong></td>
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<tr>
<td>CS 114</td>
<td>Introduction to Computer Science II</td>
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<td>MATH 333</td>
<td>Probability and Statistics</td>
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<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 241</td>
<td>Foundations of Computer Science I</td>
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<td>CS 280</td>
<td>Programming Language Concepts</td>
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<td>IS 350</td>
<td>Computers, Society and Ethics</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</td>
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<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>CS 288</td>
<td>Intensive Programming in Linux</td>
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<td>CS 332</td>
<td>Principles of Operating Systems</td>
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<td>Social Sciences 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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<td>CS 301</td>
<td>Introduction to Data Science</td>
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<tr>
<td>CS 356</td>
<td>Introduction to Computer Networks</td>
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<td><strong>Term Credits</strong></td>
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<tr>
<td>CS 331</td>
<td>Database System Design &amp; Mgmt</td>
<td>3</td>
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</table>
B.S. in Computer Science

**Fourth Year**

1st Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CS 435</td>
<td>Advanced Data Structures and Algorithm Design</td>
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<tr>
<td>CS 490</td>
<td>Guided Design in Software Engineering</td>
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<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">Link</a></td>
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<td>Math or Science Elective 4</td>
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<tr>
<td>CS upper-level Elective 3</td>
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**Total Credits:** 16

2nd Semester

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<th>Course</th>
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<tr>
<td>CS 491</td>
<td>Senior Project</td>
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<tr>
<td>Humanities and Social Science Senior Seminar GER</td>
<td><a href="http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/hss-capstone">Link</a></td>
<td>3</td>
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<tr>
<td>CS upper-level Elective</td>
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<td>3</td>
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<tr>
<td>General Elective</td>
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<tr>
<td>CS/IS/IT Elective 200 or above 1</td>
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**Total Credits:** 15

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1. CS/IS/IT Elective: Two 3 credit CS/IS/IT electives (200 level or above).
2. General Electives: Two courses any level. Please consult your advisor for appropriate general electives.
3. CS upper-level Elective: CS course 300 level and above (excluding CS 310/410).
4. Math Elective:
   - If you took MATH 244 ([Link](http://catalog.njit.edu/search/?P=MATH%20244)) Introduction to Probability Theory you must take MATH 341 ([Link](http://catalog.njit.edu/search/?P=MATH%20341)) Statistical Methods II.
   - If you took MATH 333 ([Link](http://catalog.njit.edu/search/?P=MATH%20333)) Probability and Statistics you may take any of the following:
     - CS 337 ([Link](http://catalog.njit.edu/search/?P=CS%20337)) Performance Modeling in Computing,
     - MATH 211 ([Link](http://catalog.njit.edu/search/?P=MATH%20211)) Calculus III A
     - MATH 213 ([Link](http://catalog.njit.edu/search/?P=MATH%20213)) Calculus III B,
     - MATH 222 ([Link](http://catalog.njit.edu/search/?P=MATH%20222)) Differential Equations
   - or any Math 300/400 level except MATH 305 ([Link](http://catalog.njit.edu/search/?P=MATH%20305)) Statistics for Technology.

**Minimum Grades**

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.

See the General Education Requirements “Refer to the General Education Requirements for specific information for GER courses”

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.