Computers are ubiquitous, and thus so is the code to run devices, applications and even the machines themselves. The most complicated artifacts built by humans are software systems, and software engineers design and develop these systems. Using cutting edge engineering principles and practices in a hands-on team-oriented environment, software engineering students learn how to build the code of the future.

Through exposure to the University Curriculum, foundational course work in science, mathematics, major field courses and extracurricular activities, students graduating with a BS in Software Engineering achieve intellectual proficiencies in critical thinking and reasoning, scientific literacy, quantitative reasoning, information fluency and creative thinking and visual literacy. They also achieve interpersonal proficiencies in written and oral communication, responsible citizenship, diversity awareness and sensitivity and social intelligence.

BS in Software Engineering Curriculum

Note: a minimum grade of C- is required for all computer science and software engineering course prerequisites, unless otherwise stated.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>FYS 101</td>
<td>First-Year Seminar</td>
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<tr>
<td>EN 101</td>
<td>Introduction to Academic Reading and Writing</td>
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<tr>
<td>EN 102</td>
<td>Academic Writing and Research</td>
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<tr>
<td>MA 205</td>
<td>Introduction to Discrete Mathematics (CSC 205)</td>
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<td>BIO 101 &amp; 101L</td>
<td>General Biology I and General Biology I Lab</td>
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<tr>
<td>BIO 150 &amp; 150L</td>
<td>General Biology for Majors and General Biology for Majors Laboratory</td>
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<tr>
<td>PHY 121</td>
<td>University Physics</td>
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<td>CHE 110 &amp; 110L</td>
<td>General Chemistry I and General Chemistry I Lab</td>
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<tr>
<td>ENR 110</td>
<td>The World of an Engineer</td>
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<tr>
<td>MA 141</td>
<td>Calculus of a Single Variable</td>
<td>3</td>
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<tr>
<td>MA 150</td>
<td>Integral Calculus With Applications</td>
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<tr>
<td>MA 153</td>
<td>Calculus II: Part A</td>
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<tr>
<td>MA 154</td>
<td>Calculus II: Part B</td>
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<tr>
<td>MA 229</td>
<td>Linear Algebra</td>
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<tr>
<td>MA 301</td>
<td>Foundations of Advanced Mathematics</td>
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<tr>
<td>MA 305</td>
<td>Discrete Mathematics</td>
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<tr>
<td>MA 315</td>
<td>Theory of Computation (CSC 315)</td>
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<td>Numerical Analysis (CSC 361)</td>
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<td>MA 378</td>
<td>Mathematical Modeling</td>
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<td>Programming and Problem Solving Lab</td>
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<tr>
<td>CSC 111 &amp; 111L</td>
<td>Data Structures and Abstraction and Data Structures and Abstraction Lab</td>
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<tr>
<td>CSC 215</td>
<td>Algorithm Design and Analysis</td>
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<td>SER 120 &amp; 120L</td>
<td>Object-Oriented Design and Programming and Object-Oriented Design and Programming Lab</td>
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<td>SER 210</td>
<td>Software Engineering Design and Development</td>
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<td>SER 225</td>
<td>Introduction to Software Development (CSC 225)</td>
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<tr>
<td>SER 305</td>
<td>Advanced Computational Problem Solving</td>
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<td>SER 320</td>
<td>Software Design and Architecture</td>
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<td>SER 330</td>
<td>Software Quality Assurance</td>
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<td>SER 340</td>
<td>Software Requirements Analysis</td>
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<td>SER 350</td>
<td>Software Project Management</td>
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<tr>
<td>SER 490</td>
<td>Engineering Professional Experience</td>
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<td>SER 491</td>
<td>Senior Capstone I</td>
<td>3</td>
</tr>
<tr>
<td>SER 492</td>
<td>Senior Capstone II</td>
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</tbody>
</table>
Bachelor of Science in Software Engineering

CSC Elective: CSC 210 or any CSC course at the 300-level or above 3

SER Elective: Any two additional SER courses at the 300-level or above 6

Total Credits 118

1. The second Natural Science course must be a continuation of the first course.
2. Courses must be from different areas.
3. Take two classes, each from a different area.
4. Total math/science credits must equal a minimum of 30.
5. Waived with approved minor.

Student Learning Outcomes

Attainment of the following outcomes prepares graduates to enter the professional practice of engineering:

1. An ability to **identify, formulate and solve** complex engineering problems by applying principles of engineering, science and mathematics.
2. An ability to **apply** engineering design to produce solutions that meet specified needs with consideration of public health, safety and welfare, as well as global, cultural, social, environmental and economic factors.
3. An ability to **communicate** effectively with a range of audiences.
4. An ability to **recognize** ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental and societal contexts.
5. An ability to **function effectively** on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks and meet objectives.
6. An ability to **develop and conduct** appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
7. An ability to **acquire and apply** new knowledge as needed, using appropriate learning strategies.

Program Educational Objectives

Within four to seven years of graduation, Software Engineering majors are expected to:

1. Be seen as models of ethical behavior in their profession and community.
2. Achieve sustained employment in a professional field and/or pursue additional educational opportunities.
3. Continue lifelong learning as they develop professionally and maintain currency with software engineering knowledge and skills.
4. Demonstrate professional and personal growth through leadership and mentoring roles.

Admission Requirements: School of Engineering

The requirements for admission into the undergraduate School of Engineering programs are the same as those for admission to Quinnipiac University.

Admission to the university is competitive, and applicants are expected to present a strong college prep program in high school. Prospective freshmen are strongly encouraged to file an application as early in the