# Bachelor of Science in Computer Science

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Pervasive and ever-changing computing technology provides the infrastructure for our globally connected world. Computer scientists are among the professionals who conceive, design, build and deploy critical software and hardware to support and advance this infrastructure. The Computer Science program prepares computer scientists who are able to contribute immediately and effectively to this project. Computer Science graduates possess a solid grounding in core knowledge that they can apply to solve new and emerging problems with innovative solutions. Since new computing knowledge is regularly generated, computer science graduates are able to independently identify, learn and apply new concepts.

## BS in Computer Science Curriculum

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

Within the policies of the School of Engineering, the Computer Science program enforces credit limits during the academic terms. Exceeding 18 credits in the Fall or Spring semesters, 4 credits in the January term, or 10 credits in each Summer term requires the approval of the Dean's Office.

### Code | Title | Credits
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**University Curriculum**

**Foundations of Inquiry:**
- FYS 101 | First-Year Seminar | 3
- EN 101 | Introduction to Academic Reading and Writing | 3
- EN 102 | Academic Writing and Research | 3

**Quantitative Literacy:**
- MA 205 | Introduction to Discrete Mathematics (CSC 205) | 3

**Disciplinary Inquiry:**
- Take one of the following Natural Science courses: 1 | 4
  - BIO 101 | General Biology I and General Biology I Lab | 1
  - BIO 150 | General Biology for Majors and General Biology for Majors Laboratory | 1
  - PHY 121 | University Physics | 1
  - CHE 110 | General Chemistry I and General Chemistry I Lab | 1

**Humanities, Social Sciences, Fine Arts:** 2 | 9
- Personal Inquiry I:
  - Take second semester of Natural Science course chosen above | 4
  - Take two additional courses from within Humanities, Social Sciences, Fine Arts 2 | 6

**Personal Inquiry II:**
- MA 141 | Calculus of a Single Variable 6 | 3

### Integrative Capstone
- 3

### Additional Requirements:
- MA 229 | Linear Algebra | 3
- MA electives (take 6 additional credits). All MA electives must come from the following list: 5
  - MA 150 | Integral Calculus With Applications | 3
  - MA 153 | Calculus II: Part A | 3
  - MA 154 | Calculus II: Part B | 3
  - MA 285 | Applied Statistics | 3
  - MA 301 | Foundations of Advanced Mathematics | 3
  - MA 305 | Discrete Mathematics | 3
  - MA 318 | Cryptography (CSC 318) | 3
  - MA 321 | Abstract Algebra | 3
  - MA 370 | Number Theory | 3
  - MA 378 | Mathematical Modeling | 3

Or any mathematics course with rigor at least equivalent to MA 141 with program director approval

- ENR 395 | Professional Development Seminar | 1

### Computer Science Core Requirements

- CSC 110 & 110L | Programming and Problem Solving and Programming and Problem Solving Lab | 4
- CSC 111 & 111L | Data Structures and Abstraction and Data Structures and Abstraction Lab | 4
- SER 120 & 120L | Object-Oriented Design and Programming and Object-Oriented Design and Programming Lab | 4
- CSC 215 | Algorithm Design and Analysis | 3
- SER 225 | Introduction to Software Development | 3
- CSC 310 | Operating Systems and Systems Programming | 3
- CSC 315 | Theory of Computation (MA 315) | 3
- CSC 325 | Database Systems (SER 325) | 3
- CSC 340 | Networking and Distributed Processing | 3
- CSC 491 | Senior Project I | 3
- CSC 492 | Senior Project II | 3
- CSC Electives (Take 9 credits of CSC elective courses) 3 | 9

### Total Credits
- 105

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1. Must take the full-year sequence.
2. Courses must be from different areas.
Bachelor of Science in Computer Science

3 Can be a software engineering elective (SER 210 or any 300-level or above SER course).
4 Must meet a minimum of 18 credits in Personal Inquiry I & II.
5 Total math credits must equal a minimum of 15.
6 MA 151 (Calculus I) can also count.

Complete additional coursework to reach 120 credits. This coursework must include any missing UC credits from Personal Inquiry above.

**Student Learning Outcomes**

Graduates of the program will have an ability to:

1. **Analyze** a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.
2. **Design, implement and evaluate** a computing-based solution to meet a given set of computing requirements in the context of the program’s discipline.
3. **Communicate effectively** in a variety of professional contexts.
4. **Recognize** professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.
5. **Function effectively** as a member or leader of a team engaged in activities appropriate to the program’s discipline.
6. **Apply** computer science theory and software development fundamentals to produce computing-based solutions.

**Program Educational Objectives:**

Graduates of the Computer Science BA or BS programs shall become successful professionals who are recognized for:

1. Advanced grasp of core computer science knowledge and skill.
2. Ability to communicate complex ideas and problems to a professional audience.
3. Ethical behavior and capacity for finding engineering solutions that consider both the technical and social consequences of their work.
4. Leadership, mentorship and contributions to their profession and community.
5. Pursuit of intellectual, personal and professional development.

**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 first-year students are strongly encouraged to file an application as early in the senior year as possible, and arrange to have first quarter grades sent from their high school counselor as soon as they are available.

For detailed admission requirements, including required documents, please visit the Admissions page of this catalog.

**Seamless Transfer Agreement with Gateway Community College (GCC), Housatonic Community College (HCC) and Norwalk Community College (NCC)**

Under this Transfer Agreement, GCC, HCC and NCC graduates will be guaranteed admission into a bachelor’s degree program with third year (junior) status at Quinnipiac University on the condition that they:

- Graduate with an associate in arts, an associate in science in business, College of Technology engineering science and computer science, nursing or an allied health degree with a minimum cumulative GPA of 3.0 (this may be higher in specific programs).
- Satisfy all other Quinnipiac University transfer admission requirements and requirements for intended major.

Quinnipiac University agrees to accept the general education embedded in these associate degree programs in accordance with Quinnipiac preferred choices for general education as meeting all the requirements of its undergraduate general education except for the Integrative Capstone Experience and where courses are encumbered by the major (e.g., General Chemistry for the Disciplinary Inquiry Natural Science requirement for a Biochemistry major).

**Suggested Transfer Curriculum for BS in Computer Science**

A minimum of 60 credits is required for transfer into the BS in Computer Science program. Below is a sample plan of study for the first two years.

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