

# 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 Computing and 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
<b>University Curriculum</b>		
<b>Foundations of Inquiry:</b>		
FYS 101	First-Year Seminar	3
EN 101	Introduction to Academic Reading and Writing	3
EN 102	Academic Writing and Research	3
<b>Quantitative Literacy:</b>		
MA 205	Introduction to Discrete Mathematics (CSC 205)	3
<b>Disciplinary Inquiry:</b>		
Take one of the following Natural Science courses: <sup>1</sup>		4
BIO 101 & 101L	General Biology I and General Biology I Lab	
BIO 150 & 150L	General Biology for Majors and General Biology for Majors Laboratory	
PHY 121	University Physics	
CHE 110 & 110L	General Chemistry I and General Chemistry I Lab	
Humanities, Social Sciences, Fine Arts: <sup>2</sup>		9
<b>Personal Inquiry I:</b>		
Take second semester of Natural Science course chosen above <sup>1</sup>		4
Take two additional courses from within Humanities, Social Sciences, Fine Arts <sup>2</sup>		6
<b>Personal Inquiry II:</b>		

MA 141	Calculus of a Single Variable <sup>6</sup>	3
Take an additional 5 UC credits (the mathematics electives below could count) <sup>4</sup>		5
<b>Integrative Capstone</b>		<b>3</b>
<b>Additional Requirements:</b>		
MA 229	Linear Algebra	3
MA electives (take 6 additional credits). All MA electives must come from the following list: <sup>5</sup>		6
MA 150	Integral Calculus With Applications	
MA 153	Calculus II: Part A	
MA 154	Calculus II: Part B	
MA 285	Applied Statistics	
MA 301	Foundations of Advanced Mathematics	
MA 305	Discrete Mathematics	
MA 318	Cryptography	
MA 321	Abstract Algebra	
MA 370	Number Theory	
MA 378	Mathematical Modeling	
Or any mathematics course with rigor at least equivalent to MA 141 with program director approval		
ENR 395	Professional Development Seminar	1
<b>Computer Science Core Requirements</b>		
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 210	Computer Architecture and Organization	3
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	3
CSC 325	Database Systems	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) <sup>3</sup>		9
<b>Total Credits</b>		<b>104</b>

<sup>1</sup>

Must take the full-year sequence.

<sup>2</sup>

Courses must be from different areas.

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 Outcomes

Graduates of the program will have an ability to:

1. Analyze a complex computing problem and 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

Within four to seven years of graduation, graduates of the Computer Science BS program are expected to:

1. Apply advanced computer science knowledge and skills.
2. Communicate complex ideas and problems to a professional audience.
3. Demonstrate ethical behavior and capacity for finding computing solutions that consider both the technical and social consequences of their work.
4. Demonstrate leadership and mentorship, and contribute to their profession and community.
5. Pursue intellectual, personal and professional development.

## Admission Requirements: School of Computing and Engineering

The requirements for admission into the undergraduate School of Computing and 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 3.00 (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.

Course	Title	Credits
<b>First Year</b>		
<b>Fall Semester</b>		
English I		3
Calculus I		4
Java Programming I		4
Elective		3
Elective		3
<b>Credits</b>		<b>17</b>
<b>Spring Semester</b>		
English II		3
Discrete Mathematics		3
Java Programming II - Logic & Design		4
Elective		3
Elective		3
<b>Credits</b>		<b>16</b>
<b>Second Year</b>		
<b>Fall Semester</b>		
Calculus II		4
General Chemistry I with Lab		4
History Elective		3
Elective		3

Elective	3
<b>Credits</b>	<b>17</b>
<b>Spring Semester</b>	
Digital Circuits/Electronics	3
General Chemistry II with Lab	4
Math Elective	3
Elective	3
Elective	3
<b>Credits</b>	<b>16</b>
<b>Total Credits</b>	<b>66</b>