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.

The BS in Computer Science program requires a minimum of 120 credits for degree completion.

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 & 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.

Please see footnotes for additional information.

Code	Title	Credits
University Curriculum (http://catalog.qu.edu/academics/university-curriculum/)		**50**
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 210	Digital Logic and Design	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) [1]		9
ENR 395	Professional Development Seminar	1
MA 229	Linear Algebra	3
Required math and science courses counting toward the University Curriculum		
MA 205	Introduction to Discrete Mathematics (CSC 205)	
MA 141 or MA 15	Calculus of a Single Variable Calculus I	
8 credits of UC Natural Science with Lab in BIO, CHE, PHY [2]		
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		
Open Electives		**12**
Total Credits		**114**

[1] Can be a software engineering elective (SER 210 or any 300-level or above SER course).

[2] The first 4 credits of Math and Science courses should be chosen from: BIO 101, BIO 101L, BIO 150, BIO 150L, CHE 110, CHE 110L, PHY 121. The second 4 credits should be the continuation of your first selection: BIO 102, BIO 102L, BIO 151, BIO 151L, CHE 111, CHE 111L, PHY 122.

[3] Total math credits must equal a minimum of 15.

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

Course plans are subject to change. Course availability, potential transfer credits, and course prerequisite completion may influence the final course schedule for each program.

Course	Title	Credits
First Year		
Fall Semester		
CSC 110 & 110L	Programming and Problem Solving and Programming and Problem Solving Lab	4
MA 141	Calculus of a Single Variable (UC Personal Inquiry 2)	3
FYS 101	First-Year Seminar (UC Foundations Inquiry)	3
EN 101	Introduction to Academic Reading and Writing (UC Writing 1)	3
University Curriculum Course		3
	Credits	**16**

Spring Semester

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
MA 205	Introduction to Discrete Mathematics (CSC 205) (UC Math requirement)	3
EN 102	Academic Writing and Research (UC Writing 2)	3
	Credits	**14**

Second Year

Fall Semester

SER 225	Introduction to Software Development	3
CSC 215	Algorithm Design and Analysis	3
Math Elective		3
University Curriculum course		3
University Curriculum Science Requirement [1]		4
	Credits	**16**

Spring Semester

CSC 210	Digital Logic and Design	3
CSC 340	Networking and Distributed Processing	3
MA 229	Linear Algebra	3
University Curriculum Course		3
University Curriculum Science Requirement [2]		4
	Credits	**16**

Third Year

Fall Semester

CSC 310	Operating Systems and Systems Programming	3
CSC 325	Database Systems	3
Math Elective		3
University Curriculum Course		3
University Curriculum Course		3
ENR 395	Professional Development Seminar	1
	Credits	**16**

Spring Semester

CSC 315	Theory of Computation	3
CSC/SER Elective		3
University Curriculum Course		3
University Curriculum Course		3
Open Elective		3
	Credits	**15**

Fourth Year

Fall Semester

CSC 491	Senior Project I	3
CSC/SER Elective		3
University Curriculum Course/Open Elective		3
Open Elective		3
Open Elective		3
	Credits	**15**

Spring Semester

CSC 492	Senior Project II	3
CSC/SER Elective		3
ENR 410	School of Computing and Engineering Integrative Capstone (will count for UC Integrative Capstone)	3
Open Elective		3
Open Elective		3
	Credits	**15**
	Total Credits	**123**

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 & Engineering

The requirements for admission into the undergraduate School of Computing & 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
First Year		
Fall Semester		
English I		3
CSC 1201 (Introduction to Programming)		4
MATH 2600 (Calculus I)		4
Gen Ed Elective		3
Gen Ed Elective		3
	Credits	**17**
Spring Semester		
English II		3
CSC 2213 (Object-Oriented Programming)		4
MATH 2611 (Discrete Mathematics)		4
Gen Ed Elective		3
Gen Ed Elective		3
	Credits	**17**
Second Year		
Fall Semester		
CSC 2216 (Data Structures and Algorithms)		4
MATH 2610 (Calculus II)		4
General Chemistry I with Lab		4
Gen Ed Elective		3
	Credits	**15**
Spring Semester		
CSC 2217 (Digital Design)		4
CSC 2218 (Software Engineering Methods)		4
MATH 2621 (Linear Algebra)		4
General Chemistry II with Lab		4
	Credits	**16**
	Total Credits	**65**