# BACHELOR OF ARTS IN COMPUTER SCIENCE

Program Contact: Jonathan Blake (Jonathan.Blake@quinnipiac.edu) 203-582-8539

Computers and computing have become increasingly integrated into our society and continually shape our lives. One does not have to look far to find examples of computing's significant impact, from smartphone applications to credit checking systems to self-driving cars. Society needs graduates with not only strong technical skills but also significant knowledge in these application domain areas. The Bachelor of Arts in Computer Science program offers a balanced curriculum that supports students as they combine study in computer science with other disciplines across the university. The program promotes this interdisciplinary work by providing a technical core with breadth requirements, a flexible elective structure, and required directed study outside the major. The curriculum is designed to prepare students to contribute to both established and emerging application domains.

## BA 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 |
|---|---|---|
| **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 four UC courses from within Sciences (with lab), Humanities, Social Sciences, Fine Arts [1] | | 13 |
| **Personal Inquiry I:** | | |
| Take three UC courses from within Sciences, Humanities, Social Sciences, Fine Arts [1] | | |
| **Personal Inquiry II:** | | |
| Choose one of the following: [2] | | |
| MA 141 | Calculus of a Single Variable | |
| MA 229 | Linear Algebra | |
| Take additional UC credits (the mathematics elective below could count) [4] | | |
| **Personal Inquiry I and Personal Inquiry II Total** | | **18** |
| **Integrative Capstone** | | **3** |
| **Additional Requirements:** | | |
| MA elective [5] | | 3 |
| ENR 395 | Professional Development Seminar | 1 |
| **Directed Study** | | |
| Complete minimum 18 credits of approved directed study outside Computer Science [6] | | 18 |
| **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 | Computer Architecture and Organization | 3 |
| CSC 215 | Algorithm Design and Analysis | 3 |
| CSC 225 | Introduction to Software Development | 3 |
| CSC 493 Senior Thesis 1 | | 1 |
| CSC 494 Senior Thesis 2 | | 3 |
| CSC Electives (Take 9 credits of CSC elective courses) [3] | | 9 |
| **Total Credits** | | **102** |

[1]

Courses must be from different areas.

[2]

Counts in this category only if MA 141 is taken.

[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]

Must be MA 140 or higher.

[6]

A minor or second major will satisfy this requirement.

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 at the confluence of computer science and another 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 BA 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 BA in Computer Science

A minimum of 60 credits is required for transfer into the BA 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 |
| Calculus I | | 4 |
| Java Programming I | | 4 |
| Elective | | 3 |
| Elective | | 3 |
| | **Credits** | **17** |
| **Spring Semester** | | |
| English II | | 3 |
| Discrete Mathematics | | 3 |
| Java Programming II - Logic & Design | | 4 |
| Elective | | 3 |
| Elective | | 3 |
| | **Credits** | **16** |
| **Second Year** | | |
| **Fall Semester** | | |
| Calculus II | | 4 |
| General Chemistry I with Lab | | 4 |
| History Elective | | 3 |
| Elective | | 3 |
| Elective | | 3 |
| | **Credits** | **17** |
| **Spring Semester** | | |
| Digital Circuits/Electronics | | 3 |
| General Chemistry II with Lab | | 4 |
| Math Elective | | 3 |
| Elective | | 3 |
| Elective | | 3 |
| | **Credits** | **16** |
| | **Total Credits** | **66** |