

# Computer Science, BA

## Requirements

The Bachelor of Arts with a major in computer science requires a minimum of 120 s.h., including at least 41 s.h. of work for the major. Students must maintain a grade-point average (GPA) of at least 2.00 in all courses for the major and in all UI courses for the major. A cumulative GPA of at least 2.00 is required for graduation. Students must also complete the College of Liberal Arts and Sciences GE CLAS Core.

The computer science major for the Bachelor of Arts is designed for students who would like to gain considerable knowledge in computer science and have flexibility in choosing electives. Students preparing for careers in the computing field are encouraged to supplement the base requirements with additional computer science courses. The program's flexibility makes it suitable for combination with other majors.

Coursework for the major includes computer science courses as well as courses in mathematics, statistics, and other supporting disciplines. Work for the major may not be taken pass/nonpass.

Bachelor of Arts students considering a switch to the Bachelor of Science program should choose their GE CLAS Core Natural Sciences courses carefully because students may be able to use the same courses to satisfy the computer science major natural science sequences requirement for the BS degree. See "Natural Science Sequences" under Requirements in the BS in computer science section of the catalog.

Students who major in computer science may not also major or minor in computer science and engineering, data science, or informatics.

## Departmental Residency Requirement

Students who earn a BA in computer science must complete at least five courses (minimum of 15 s.h.) at the University of Iowa from the following: CS:2630 Computer Organization or ECE:3350 Computer Architecture and Organization, CS:2820 Introduction to Software Development, CS:3330 Algorithms, and at least two computer science courses (prefix CS) numbered 3620-5899, but excluding CS:3910 Informatics Project, CS:3980 Topics in Computer Science I, and CS:4310 Design and Implementation of Algorithms; these courses are requirements for the BA in computer science as listed below.

## Program Requirements

The BA with a major in computer science requires the following coursework. Enrollment in many courses for the major requires a minimum grade of C-minus in prerequisite courses.

Requirements	Hours
Computer Science Core Courses	27-28
Mathematics Core Courses	11-12
Advanced Computer Science Electives	3

## Computer Science Core

Course #	Title	Hours
All of these:		
CS:1210	Computer Science I: Fundamentals	4
CS:2210	Discrete Structures	3
CS:2230	Computer Science II: Data Structures	4
CS:2820	Introduction to Software Development	4
CS:3330	Algorithms	3
CS:3820	Programming Language Concepts	3
One of these:		
CS:2630	Computer Organization	4
ECE:3350	Computer Architecture and Organization	3
One of these:		
CS:3620	Operating Systems	3
CS:3640	Introduction to Networks and Their Applications	3

## Mathematics Core

### Calculus I

Course #	Title	Hours
One of these:		
MATH:1550	Engineering Calculus I	4
MATH:1850	Calculus I	4

### Calculus II

Course #	Title	Hours
One of these:		
MATH:1560	Engineering Calculus II	4
MATH:1860	Calculus II	4

## Linear Algebra/Probability and Statistics

Students who take MATH:2550 Engineering Matrix Algebra and MATH:2560 Engineering Differential Equations can use these courses together to satisfy the linear algebra requirement.

Course #	Title	Hours
One of these:		
MATH:2700	Introduction to Linear Algebra	4
STAT:2020	Probability and Statistics for the Engineering and Physical Sciences	3
STAT:3120	Probability and Statistics	4

## Advanced Computer Science Electives

Course #	Title	Hours
At least 3 s.h. from these:		
A computer science course (prefix CS) numbered 3620-5899, except CS:3910, CS:3980, or CS:4310		

A computer science course (prefix CS) numbered 5900 or above, with department approval

Students may count a maximum of 3 s.h. earned in CS:3990 Honors in Computer Science or Informatics toward the advanced computer science electives requirement.

## **Early Admission to the Graduate College**

Undergraduate computer science students who have 6 s.h. or less to earn toward graduation may apply for early admission to the Graduate College. Early admission allows students in their final undergraduate semester to take courses for graduate credit in addition to the courses they need to complete their bachelor's degrees.