

Catalog 2007-08 Requirements for the Computer Science Major

Core Courses Required for All Computer Science Major Programs: (32 units)

CS 10 Introduction to Computer Science I (4)
CS 30 Introduction to Computer Science II (4)
CS 120 Data Structures/Algorithms (4)
CS 130 Software Development (4)
CS 110 Historical and Ethical Issues in Computing or PY 104 Ethics (4)
CS 192 Project (2)
CS 195 Senior Seminar (4)
CS 198 Research (2)
MA 15 Discrete Mathematics (4)

In addition to the core courses, one of the following four programs must be completed, providing depth in computer science and (optionally) one other field of interest. Students customize their program in conjunction with their faculty advisor and, in the case of an emphasis in a second field, also with a faculty member from the other department.

(1) General B.A. in Computer Science (44 units including core)

CS 45 Computer Organization and Architecture (4)
CS 105 Programming Languages (4)
Additional CS/Math courses to bring the total to 44 units

(2) General B.S. in Computer Science (56 units including core)

CS 45 Computer Organization and Architecture (4)
CS 105 Programming Languages (4)
MA 9 Calculus (4)
Additional CS/Math courses to bring the total to 56 units

(3) B.A. in Computer Science with Emphasis in a Second Field (48 or more units including core)

Three additional CS/Math courses, one of which must be a CS upper-division course
Three courses from a second field of interest, two of which must be upper-division courses

(4) B.S. in Computer Science with Emphasis in a Second Scientific Field (56 or more units including core)

Three additional CS/Math courses, one of which must be a CS upper-division course
Three courses from a second field of interest, two of which must be upper-division courses
Additional CS/Math courses and/or courses from the second field to bring the total to 56 units

Proposed Requirements for the Computer Science Major

Required Core: (32 units)

CS 10 Introduction to Computer Science I (4)
CS 15 Discrete Mathematics (4)
CS 30 Introduction to Computer Science II (4)
CS 50 Information and Computation: History and Ethics *or* PHI 104 Ethics *or* PHI 113 Contemporary Moral Problems (4)
CS 120 Data Structures/Algorithms (4)
CS 130 Software Development (4)
CS 192 Project (2)
CS 195 Senior Seminar (4)
CS 198 Research (2)

In addition to the core courses, students must complete one of the following four tracks, providing depth in computer science and optionally, an area of emphasis. The emphasis tracks allow a student to complete an interdisciplinary major combining computer science with another field of interest. Examples of additional fields of interest include business (management information systems), art (computer graphics), psychology and art (human-computer interaction) biology (bioinformatics), psychology (cognitive science or neuroscience), philosophy (artificial intelligence), art and communications (digital media arts), and engineering-physics (computer engineering). The emphasis tracks must be planned with the faculty advisor and also with a faculty member from the other discipline, to ensure that the resulting major is coherent. A student completing an emphasis track will be required to demonstrate the manner in which computer science and the emphasis field are integrated through a reflective essay written as part of the Senior Seminar.

B.A. in Computer Science General Track (44 units including core)

Additional CS courses numbered above CS 30 to bring the total to 44 units.

B.S. in Computer Science General Track (56 units including core)

Additional CS courses numbered above CS 30 to bring the total to 56 units.

B.A. in Computer Science Emphasis Track (48 units including core)

Three courses from a second field, two of which must be upper-division courses
Additional CS courses numbered above CS 30 to bring the total to 48 units.

B.S. in Computer Science Emphasis Track (56 units including core)

Three courses from a second field within the Natural and Behavioral Sciences Division, two of which must be upper-division courses
Additional CS courses numbered above CS 30 to bring the total to 56 units.