

# Bachelor of Science in Computer Science

The Bachelor of Science in Computer Science degree program provides a strong technical background for students planning to begin careers upon graduation and for those interested in graduate study in computer science. This program allows students to take more coursework in computer science and related technical areas than does the bachelor of science and arts degree program.

In addition to the three options leading to the Bachelor of Science in Computer Science, students may apply to the Integrated Program, which leads to simultaneous completion of the Bachelor of Science in Computer Science and the Master of Science in Computer Science, the Master of Science in Information Studies, or the Master of Science in Computational Science, Engineering, and Mathematics. The requirements for the Bachelor of Science in Computer Science, Integrated Program are given below. The requirements for the Master of Science in Computer Science, the Master of Science in Information Studies, and the Master of Science in Computational Science, Engineering, and Mathematics are described in the [Graduate Catalog](#).

Students who would like to pursue any of the following degree programs must first be admitted. The admission processes for Bachelor of Science in Computer Science, Turing Scholars Honors, Integrated Program and Computer Science and Business Honors are described in [The Major in Computer Science](#); the admission process for Computer Science Honors is described in the section [Dean's Scholars Honors Program](#).

## Prescribed Work Common to All Degrees

In the process of fulfilling degree requirements, all students must complete:

- a. Core curriculum
- b. Skills and experience flags:
  - i. Writing: two flagged courses beyond Rhetoric and Writing 306 or its equivalent, including one at the upper-division level
  - ii. Quantitative reasoning: one flagged course
  - iii. Global cultures: one flagged course
  - iv. Cultural diversity in the United States: one flagged course
  - v. Ethics: one flagged course
  - vi. Independent inquiry: one flagged course

Courses that may be used to fulfill flag requirements are identified in the [Course Schedule](#). They may be used simultaneously to fulfill other requirements, unless otherwise specified. Please note, students may not earn the cultural diversity in the United States and the global cultures flags from the same course. Students are encouraged to discuss options with their academic advisors.

- c. One of the following foreign language/culture choices: (Students in Computer Science Honors, and Honors Computer Science and Business are exempt from this requirement)
  - a. Beginning level proficiency coursework, or the equivalent, in a foreign language
  - b. First course in a foreign language and a three-semester-hour course in the culture of the same language area
  - c. Two three-semester-hour courses in one foreign culture area. The courses must be chosen from an approved list available in the dean's office and the college advising centers. A list may also be found here: <https://cns.utexas.edu/students/degrees-majors-advising/university-core-curriculum/foreign-culture-requirement>.

- d. At least 42 semester hours of upper-division coursework.
- e. At least 21 semester hours of upper-division coursework in computer science must be completed in residence at the University.

## Additional Prescribed Work for Each Option

### Computer Science

- f. Mathematics 408C and 408D, or 408N, 408S, and 408M; either 340L or 341 or Statistics and Data Sciences 329C; and Mathematics 362K or Statistics and Data Sciences 321
- g. One of the following sequences of coursework:
  - a. Either Biology 311C and 311D, or Biology 315H and 325H
  - b. Chemistry 301 or 301C, and 302 or 302C
  - c. Physics 303K and 105M, 301 and 101L, or 317K and 105M; and 303L and 105N, 316 and 116L, or 317L and 105N
- h. Three to four additional hours of majors-level coursework chosen from:
  - a. a different sequence listed in requirement 7
  - b. Geological Sciences 303 or Geological Sciences 401
  - c. upper-division mathematics, excluding Mathematics 325K, 340L, 341, and 362K
- i. The following courses in computer science:
  - a. Theory: Computer Science 311 or 311H, 331 or 331H
  - b. Programming: Computer Science 312, 314 or 314H
  - c. Systems: Computer Science 429 or 429H, 439 or 439H
  - d. Twenty-four additional hours of upper-division courses in computer science
- j. Enough additional coursework to make a total of 120 semester hours.

### Turing Scholars Honors

- f. Mathematics 408C and 408D, or 408N, 408S, and 408M; either 340L or 341 or Statistics and Data Sciences 329C; and Mathematics 362K or Statistics and Data Sciences 321
- g. One of the following sequences of coursework:
  - i. Either Biology 311C and 311D, or 315H and 325H
  - ii. Chemistry 301 or 301C, and 302 or 302C
  - iii. Physics 303K and 105M, 301 and 101L, or 317K and 105M; and 303L and 105N, 316 and 116L, or 317L and 105N.
- h. Three or four additional hours of majors-level coursework chosen from:
  - i. a different sequence listed in requirement 7
  - ii. Geological Sciences 303 or Geological Sciences 401
  - iii. upper-division mathematics, excluding Mathematics 325K, 340L, 341, and 362K
- i. The following courses in computer science:
  - i. Theory: Computer Science 311 or 311H, 331 or 331H
  - ii. Programming: Computer Science 314 or 314H
  - iii. Systems: Computer Science 429 or 429H, 439 or 439H
  - iv. Computer Science 118H and 379H
  - v. Twenty-one hours of upper-division courses in computer science

The courses the student chooses to fulfill requirements a through c must be approved by the [Turing Scholars](#) program director. In addition to Computer Science 429H, 118H, and 379H, at least five upper-division courses chosen to fulfill requirements a through e must be honors courses. The honors thesis the student completes in Computer Science 379H must be approved by the program director.

- j. Enough additional coursework to make a total of 120 semester hours

## Computer Science Honors

- f. Breadth requirement: An honors mathematics course; Computer Science 311H and 314H; one of the following two-semester sequences: Biology 315H and 325H, Chemistry 301C and 302C, Physics 301, 101L, 316, and 116L; and either an additional three hours chosen from these courses or Physics 315 and 115L. Credit earned by examination may not be counted toward this requirement.
- g. At least six semester hours of upper-division coursework in mathematics
- h. Computer Science 429H, 331H, 439H, and 12 additional hours of upper-division coursework in computer science
- i. A section of Undergraduate Studies 302 or 303 that is approved by the departmental honors advisor
- j. A section of Rhetoric and Writing 309S that is restricted to students in the Dean's Scholars Honors Program
- k. Computer Science 379H and a three-semester-hour upper-division research course approved by the departmental honors advisor
- l. Twenty-five additional semester hours of coursework approved by the departmental honors advisor
- m. Six semester hours of coursework from the College of Liberal Arts and/or the College of Fine Arts
- n. Enough additional coursework to make a total of 120 semester hours

## Integrated Program

- f. Mathematics 408C and 408D, or 408N, 408S, and 408M; either 340L or 341 or Statistics and Data Sciences 329C; and Mathematics 362K or Statistics and Data Sciences 321
- g. One of the following sequences of coursework:
  - i. Either Biology 311C and 311D, or Biology 315H and 325H
  - ii. Chemistry 301 or 301C, and 302 or 302C
  - iii. Physics 303K and 105M, 301 and 101L, or 317K and 105M; and 303L and 105N, 316 and 116L, or 317L and 105N
- h. Three or four additional hours of majors-level coursework chosen from:
  - i. a different sequence listed in requirement 7
  - ii. Geological Sciences 303 or Geological Sciences 401
  - iii. upper-division mathematics, excluding Mathematics 325K, 340L, 341, and 362K
- i. The following courses in computer science:
  - i. Theory: Computer Science 311 or 311H, 331, or 331H
  - ii. Programming: Computer Science 312, 314 or 314H
  - iii. Systems: Computer Science 429 or 429H, 439 or 439H
  - iv. Eighteen additional hours of upper-division courses in computer science
- j. Enough additional coursework to make a total of 120 semester hours

## Honors Computer Science and Business

- 6. Mathematics 408C and 408D, or 408N, 408S, and 408M; either Mathematics 340L or 341 or Statistics and Data Sciences 329C; and Statistics and Data Sciences 321
- 7. One of the following sequences of coursework, also fulfills all of part I of the core curriculum science and technology requirement:
  - i. Either Biology 311C and 311D, or 315H and 325H
  - ii. Chemistry 301 or 301C, and Chemistry 302 or
  - iii. Physics 303K and 105M, 301 and 101L, or 317K and 105M; and 303L and 105N, 316 and 116L, or 317L and

- 8. Economics 304K and 304L
- 9. Three semester hours of coursework in anthropology, psychology, educational psychology, or sociology with a primary focus other than statistics or data processing. Courses dealing primarily with statistics or data processing may not be used to fulfill this requirement. Social Science 302C, 302D, 302E, and 302F (for Plan II dual majors only) are also accepted. A list of coursework can be found in the Canfield Business Honors academic advising office.
- 10. The following courses in computer science:
  - i. Theory: Computer Science 311H, 331H
  - ii. Programming: Computer Science 314H
  - iii. Systems: Computer Science 429H, 439H
  - iv. Twelve additional hours of upper-division courses in computer science of which six hours must carry the honors designation.
- 11. Completion of the following business core courses and other business courses in special Honors Program sections
  - i. Accounting 311H (may fulfill the quantitative reasoning flag)
  - ii. Accounting 312H (may fulfill the quantitative reasoning flag)
  - iii. Business Administration 101H
  - iv. Business Administration Honors 151H
  - v. A professional, business-related experiential learning course chosen from the following: Accounting 366P, Business Administration 353, 653, Finance 366P, Management 347P, 366P, 367P, 369P, Management Information Systems 366P, Marketing 366P, Operations Management 366P; only one of the following courses may be counted toward the degree: Business Administration 353, and Business Administration 653.
  - vi. Business Administration 324 or Communication 324H (may fulfill the writing flag)
  - vii. Decision Science 235H
  - viii. Finance 357H
  - ix. Legal Environment of Business 323H
  - x. Management 101H
  - xi. Management 336H (may fulfill the ethics flag)
  - xii. Management 327H
  - xiii. Management 374H (may fulfill the writing and independent inquiry flags)
  - xiv. Management Information Systems 301H
  - xv. Marketing 337H
  - xvi. Operations Management 235H
  - xvii. Statistics 235H (may fulfill the quantitative reasoning flag)

This dual major requires 124 hours for completion of both degrees

## Special Requirements

Students in all options must fulfill both the University's [general requirements](#) for graduation and the [college requirements](#). They must also earn a grade of at least C- in each mathematics and science course required for the degree, and a grade point average in these courses of at least 2.00. More information about grades and the grade point average is given in the [General Information Catalog](#).

Enrollment in Computer Science 312, 311 or 311H, and 314 or 314H is restricted to computer science entry-level majors. All other computer science courses that may be counted toward a degree in computer science are restricted to students who have been admitted to the computer science major or have the consent of the undergraduate faculty advisor.

An undergraduate may not enroll in any computer science course more than once without written consent of an undergraduate advisor in computer science. No student may enroll in any computer science course more than twice. No student may take more than three upper-division computer science courses in a semester without written consent of an undergraduate advisor in computer science. All transfer coursework must be approved by faculty before it can count towards a computer science degree, except where equivalency is specified by state regulation.

## Additional Requirements for Turing Scholars

Students in the Turing Scholars program, must maintain a University grade point average of at least 3.25 and a grade point average in computer science of at least 3.25; in rare circumstances, this grade point average requirement will be waived for students whose honors thesis has been judged by the Department of Computer Science Undergraduate Thesis Committee to be truly outstanding. In addition to this grade point average requirement, students must know and abide by the academic and disciplinary policies given in this catalog and in the General Information Catalog. Those who fail to do so will be considered for academic dismissal from the Turing Scholars program. Under special circumstances and at the discretion of the director, a student will be allowed to continue in the program under academic review. A student who is academically dismissed from the program may enter another computer science program if he or she fulfills the scholastic standards for continuance in the University given in *General Information*. Students in scholastic difficulty should discuss their problems with a Turing Scholars program academic advisor and the director.

## Additional Requirements for Computer Science Honors

To graduate, students must remain in good standing in the Dean's Scholars Honors Program, must submit an honors thesis approved by the departmental honors advisor, and present their research in an approved public forum, such as the college's annual Undergraduate Research Forum. More information about the Undergraduate Research Forum is available at <https://cns.utexas.edu/>.

## Additional Requirements for Integrated Program

### Satisfactory Progress

Students are expected to make continuous progress toward the degree by completing required computer science coursework each semester. Those who fail to take program coursework two fall/spring semesters in a row will be removed from the program and re-enrolled in the Bachelor of Science in Computer Science Option that they were following before admission to the Integrated Program. Students will be notified before this action is taken; they must meet with their academic advisor upon being notified.

### Warning

The student is placed on warning if his or her grade point average in required undergraduate computer science courses falls below 3.00. Except with the consent of the undergraduate advisor or the graduate advisor, a student on warning may not take graduate computer science courses.

### Dismissal

The student is dismissed from the Integrated Program if (1) he or she fails to improve his or her academic performance significantly while on

warning, or (2) he or she will not achieve a grade point average of 3.00 even by earning grades of A in all remaining required undergraduate computer science and graduate courses.

Like all students, those in the Integrated Program must know and abide by the academic and disciplinary policies given in this catalog and in the General Information Catalog. Those who fail to do so will be considered for academic dismissal from the program. Under special circumstances and at the discretion of the director, a student may be allowed to continue in the program under academic review. A student who is academically dismissed from the program may enter another computer science program if he or she fulfills the scholastic standards for continuance in the University given in the General Information Catalog. Students in scholastic difficulty should discuss their problems with an academic advisor and the undergraduate faculty advisor.

## Graduation

To receive the Bachelor of Science in Computer Science and Master of Science in Computer Science, Master of Science in Information Studies, or Master of Science in Computational Science, Engineering, and Mathematics degrees through the Integrated Program, a student must have a University grade point average of at least 3.00 in the coursework in the Master of Science Program of Work. He or she must also have a grade point average in graduate computer science and information studies, or computational science, engineering, and mathematics coursework of at least 3.00.

## Order and Choice of Work

The student must consult the faculty advisor each semester regarding order and choice of work.

Note: Computer science courses with numbers ending in *H* are intended for students in Option II, the Turing Scholars program, and Option III, computer science honors. Students outside these Options may enroll in these courses only with the special consent of the honors director.

## Additional Requirements for Honors Computer Science and Business

### Admission

Admission to Honors Computer Science and Business (CSB) is limited to a small number of high performing students who are chosen on a competitive basis. Students selected for the program will have demonstrated exceptional potential for success in both computer science and business. Admission decisions are made by the CSB Committee. Students enter the program as freshmen.

Students entering the University as freshmen may apply to the CSB by completing a separate online application available through the Office of Admissions. The CSB Committee considers the student's SAT Reasoning Test or ACT scores, high school class rank, preparatory courses, extracurricular activities, evidence of leadership ability, and other objective criteria.

### Academic Standards

A student who enters CSB as a freshman must have a grade point average of at least 3.25 on the courses taken in residence during the fall and spring semesters of the first year to continue in the program. The student must complete at least 12 semester hours in residence on the letter-grade basis during each of those two semesters. After the freshman year, each student is dismissed from the program if their overall, computer science, or business grade point average drops below 3.25. In addition to this grade point average requirement, students must know and abide by the academic and disciplinary policies given

in this catalog and in the *General Information Catalog*. Those who fail to do so will be considered for academic dismissal from the program. Under special circumstances and at the discretion of the CSB Program Committee, a student will be allowed to continue in the program under academic review. Students in scholastic difficulty should discuss their problems with the CSB Honor Program director(s) and their academic advisor(s).

## Graduation

To graduate under the CSB Honors Program, the student must earn a University grade point average of at least 3.25 and a grade point average of at least 3.25 in business courses and a grade point average of at least 3.25 in computer science courses. A candidate for any degree must be enrolled at The University of Texas at Austin in the semester in which the degree is awarded.

Students in CSB must satisfy the University's Core Curriculum and degree requirements for a B.S. in Computer Science and for a B.B.A.; combined degree requirements below. If students later elect to complete only one degree, they must consult their academic advisor(s) and fulfill all degree requirements.