COMPUTER SCIENCE MAJOR:
SYSTEMS OPTION (B.A.)

https://ceps.unh.edu/computer-science/program/ba/computer-science-
major-systems-option

Description

The B.A. in Computer Science will allow students to combine the study of computer science with the study of another field. Given the emergence of computational approaches to virtually all areas of scholarship and creative expression, it is important to offer this flexibility. The three tracks in the B.A. program contain the same computer science core as the B.S. program, but give more control to the student to choose the complementary and advanced courses.

Requirements

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Computer Science Courses

Select of the following:
- CS 400: Introduction to Computing
- CS 415: Introduction to Computer Science I
- & CS 416: and Introduction to Computer Science II
- or CS 414: From Problems to Algorithms to Programs
- & CS 417: and From Programs to Computer Science
- or CS 410P: Introduction to Scientific Programming/Python
- & CS 417: and From Programs to Computer Science
- or CS 410C: Introduction to Scientific Programming/C
- & CS 417: and From Programs to Computer Science
- IT 403: Introduction to Internet Technologies
- CS 501: Professional Ethics and Communication in Technology-related Fields
- CS 420: Foundations of Programming for Digital Systems
- CS 515: Data Structures and Introduction to Algorithms
- CS 520: Assembly Language Programming and Machine Organization
- CS 519: Introduction to Object-Oriented Design and Development
- CS 527: Fundamentals of Cybersecurity
- CS 620: Operating System Fundamentals
- CS 795: Senior Project I
- & CS 792: and Senior Project II
- or CS 799: Thesis

Computer Science Electives

Select two courses from the advanced CS course pool

Mathematics Courses

- MATH 425: Calculus I
- MATH 539: Introduction to Statistical Analysis

Select two MATH or CS Theory Courses

Science Courses

- One Discovery Biological Science (BS) with Discovery Lab
- One Discovery Physical Science (PS) with Discovery Lab

Elective Courses

- 7 Courses

Other Courses

- ENGL 401: First-Year Writing

Discovery requirements not already covered by required courses

Total Credits

Advanced CS course pool consists of the following:

- Any CS course at the 700-level
- One professional elective from the list of B.S. in Computer Science Electives

2 CS Theory courses include: CS 659, CS 723, CS 745, CS 750, CS 755, CS 757, CS 758
3 Courses must carry the Discovery attributes of Biological Science or Physical Science and include Discovery lab (DLAB).
4 Must include the foreign language requirement as defined by the University for all B.A. degrees.

Computer science majors must maintain an overall grade-point average of 2.0 or better in all required computer science, mathematics, and computer engineering courses in order to graduate. If at the end of any semester, including the first, a student's cumulative grade-point average in these courses falls below 2.0, the student may not be allowed to continue as a CS major.

The following courses must be passed with a grade of C- or better: CS 410C, CS 410P, CS 414, CS 415, CS 416, CS 417, CS 420, CS 515, CS 520, IT 403

If a student wishing to transfer into the computer science major has any coursework that is applicable to the major, the grades in those courses must satisfy the minimum grade requirements for the B.S. degree in computer science. The student must have an overall grade-point average of 2.0 or better in all courses taken at the university.

Student Learning Outcomes

Graduates of the UNH B.A. CS programs will have an ability to:

- Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.
- Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.
- Communicate effectively in a variety of professional contexts.
- Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.
- Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.
- Apply computer science theory and software development fundamentals to produce computing-based solutions.
- Learn independently about new technologies, and have the skills needed to understand them.