

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

<https://ceps.unh.edu/computer-science/program/ba/computer-science-major-cybersecurity-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

Degree Requirements

Minimum Credit Requirement: 128 credits

Minimum Residency Requirement: 32 credits must be taken at UNH

Minimum GPA: 2.0 required for conferral*

Core Curriculum Required: Discovery & Writing Program Requirements

Foreign Language Requirement: Yes

All Major, Option and Elective Requirements as indicated.

*Major GPA requirements as indicated.

Major Requirements

| Code | Title | Credits |
|-----------------------------------|--|---------|
| Computer Science Classes | | |
| CS 400 | Introduction to Computing | 2 |
| CS 415 | Introduction to Computer Science I | 4 |
| or CS 410C | Introduction to Scientific Programming/C | |
| or CS 410P | Introduction to Scientific Programming/Python | |
| CS 416 | Introduction to Computer Science II | 4 |
| IT 403 | Introduction to Internet Technologies | 4 |
| CS 501 | Professional Ethics and Communication in Technology-related Fields | 4 |
| CS 420 | Foundations of Programming for Digital Systems | 4 |
| CS 515 | Data Structures and Introduction to Algorithms | 4 |
| CS 520 | Computer Organization and System-Level Programming | 4 |
| CS 527 | Fundamentals of Cybersecurity | 4 |
| CS 620 | Operating System Fundamentals | 4 |
| CS 727 | Software Security | 4 |
| IT 666 | Cybersecurity Practices | 4 |
| CS 791 & CS 792 | Senior Project I and Senior Project II | 4 |
| or CS 799 | Thesis | |
| Computer Science Electives | | |
| Select one of the following: | | 4 |
| CS 722 | Cloud Computing Systems | |
| CS 725 | Computer Networks | |
| IT 609 | Network/Systems Administration | |
| IT 718 | Cloud Computing Principles | |
| HLS 515 | Critical Infrastructure Security and Resilience | |

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| POLT 568 | International Security | |
| Mathematics Courses | | |
| MATH 425 | Calculus I | 4 |
| MATH 539 | Introduction to Statistical Analysis | 4 |
| or MATH 644 | Statistics for Engineers and Scientists | |
| Select two MATH or CS Theory Courses ¹ | | 8 |
| Science Courses ² | | |
| One Discovery Biological Science (BS) with Discovery Lab | | 4 |
| One Discovery Physical Science (PS) with Discovery Lab | | 4 |
| Discovery requirements not already covered by required courses | | 20 |
| Total Credits | | 98 |

¹ CS Theory courses

include: CS 659, CS 723, CS 745, CS 750, CS 755, CS 757, CS 758, CS 759.

Math courses include MATH 420, MATH 426, MATH 445 or any MATH 5XX or higher

² Courses must carry the Discovery attributes of Biological Science or Physical Science and include Discovery lab (DLAB).

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 415, CS 416, 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.