COMPUTER SCIENCE MAJOR (B.A.) (UNHM)

https://manchester.unh.edu/academics/degree-programs/computer-science

Description

The computer science program combines a solid foundation in computing necessary to succeed in today's start-up and high-tech environments. The program is designed in response to market demand for students proficient in computer science.

Students in the computer science program are required to complete three sponsored projects. The projects focus on real-world experience and give students the opportunity to work with industry experts through internships and sponsored research.

Career opportunities for students with an undergraduate computer science degree are varied, and may include such areas as applications developer, computer and information research scientist, data security specialist, database administrator, database developer, multimedia developer, network architect, product development manager, quality assurance analyst, software systems developer, user experience designer, or web developer.

Program Educational Objectives

Within five years of graduation, a CS student should be able to:

• Demonstrate mastery of the core areas of computer science
• Invent, develop, manage, and evaluate computing systems and services
• Exercise professional responsibility and have appreciation of the social, legal, ethical, and cultural issues inherent in the computing field.

Program Outcomes

The program enables students to achieve, by time of graduation, the following competencies:

• Apply knowledge of computing and mathematics appropriate to the discipline.
• Analyze a problem, and identify and define the computing requirements appropriate to its solution.
• Design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs.
• Function effectively on teams to accomplish a common goal.
• Be cognizant of professional, ethical, legal, security, and social issues and responsibilities.
• Communicate effectively with a range of audiences.
• Analyze the local and global impact of computing on individuals, organizations, and society.
• Recognize the need for, and an ability to engage in, continuing professional development.
• Use current techniques, skills, and tools necessary for computing practice.
• Apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer-based systems in a way that demonstrates comprehension of the trade offs involved in design choices.
• Apply design and development principles in the construction of software systems of varying complexity.

Requirements

Students majoring in computer science must complete 128 credits to graduate, satisfy the University's Discovery Program, and complete 73 credits in the major with a minimum of C- in each course. Students must maintain an overall cumulative GPA of 2.0 or better.

Transfer students who elect to major in computer science must earn 73 approved credits for completion of the their major, of which at least 24 credits must be completed at UNH Manchester.

PROGRAM REQUIREMENTS

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<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>COMP 415</td>
<td>Mobile Computing First and For Most</td>
<td>4</td>
</tr>
<tr>
<td>COMP 425</td>
<td>Introduction to Programming</td>
<td>4</td>
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<tr>
<td>COMP 430</td>
<td>Systems Fundamentals</td>
<td>4</td>
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<tr>
<td>COMP 525</td>
<td>Data Structures Fundamentals</td>
<td>4</td>
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<td>COMP 530</td>
<td>Machine and Network Architecture</td>
<td>4</td>
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<td>COMP 560</td>
<td>Ethics and the Law in the Digital Age</td>
<td>4</td>
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<tr>
<td>COMP 625</td>
<td>Data Structures and Algorithms</td>
<td>4</td>
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<tr>
<td>COMP 698</td>
<td>Special Topics (Systems Software)</td>
<td>4</td>
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<tr>
<td>UMST 582</td>
<td>Internship and Career Planning Seminar</td>
<td>1</td>
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<tr>
<td>COMP 590</td>
<td>Entrepreneurship Project</td>
<td>4</td>
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<tr>
<td>COMP 690</td>
<td>Internship Experience</td>
<td>4</td>
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<tr>
<td>COMP 790</td>
<td>Capstone Project</td>
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</tbody>
</table>

Select three courses in computing to broaden and advance student learning of computing innovations 12

Total Credits 73

1 The program requires three mathematics courses and one physics course.
2 The program prepares students for the workforce and further education in a holistic way by emphasizing communication, collaboration, team work, initiative, appreciation for diversity, and self-direction and responsibility. These competencies are developed through the sequence of courses.
3 Advisor permission required.

For additional information about the computer science program, contact Michael Jonas, (603) 641-4352, michael.jonas@unh.edu, or
contact the UNH Manchester Office of Admissions, (603) 641-4150, unhm.admissions@unh.edu.