

COMPUTER INFORMATION SYSTEMS MAJOR (B.S.)

<http://manchester.unh.edu/academics/degree-programs/computer-information-systems>

Description

The computer information systems (CIS) or information technology (IT) field, in its broadest sense, encompasses all aspects of computing technology. During their program of study, students develop a strong skillset to effectively select, administer, apply, and integrate computing technologies to create IT solutions that meet the needs of users within an organizational context.

The bachelor of science degree in Computer Information Systems prepares graduates with knowledge, skills, and professional practices to work in the highly integrated field of computing technologies and to grow into leadership positions. The program also enables graduates to further their studies at the graduate level and pursue research in a computing-related discipline.

Career opportunities for students with an undergraduate CIS degree are varied, but may include such areas as software applications developer, data security specialist, database developer/administrator, e-commerce analyst/programmer, help desk manager, multimedia developer, network/system administrator, technical writer, technology trainer, user support specialist, testing and quality assurance specialist, or web developer. Career options exist in a wide range of organizations as all businesses, industries, and nonprofits continue to use, develop, and integrate information technology solutions.

Program Educational Objectives

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

- Apply knowledge and skills in core and advanced information technologies to help an organization achieve its goals.
- Advocate for users of information technologies, whether they are end users of information systems, managers of enterprise applications, developers of IT solutions, or customers of IT-reliant work systems.
- Develop, manage, and evaluate computing and communication systems and services.
- Live and work as contributing, well-rounded members of society.

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.
- Use and apply current technical concepts and practices in the core information technologies.
- Identify and analyze user needs and take them into account in the selection, creation, evaluation, and administration of computer-based systems.
- Effectively integrate IT-based solutions into the user environment.
- Be cognizant of best practices and standards and their application.
- Assist in the creation of an effective project plan.

The CIS program outcomes are aligned with criteria for accrediting computing programs (the first nine outcomes listed above) and information technology programs (the last five outcomes listed above) as recommended by the ABET Computing Accreditation Commission and the ACM Computing Curricula – IT 2008 Information Technology guidelines.

Requirements

Students majoring in computer information systems must complete 128 credits to graduate, satisfy the University's Discovery Program, and complete 65 credits in the major with a minimum of C- in each course and 16 credits in a self-designed concentration in an area of study that enhances learning in the IT discipline. Students must maintain an overall cumulative GPA of 2.0 or better.

Transfer students who elect to major in computer information systems must earn 65 approved credits for completion of the CIS major, of which at least 24 credits must be completed at UNH Manchester; and 16 approved credits for completion of a self-designed concentration.

Program Requirements

Required Mathematics Course

Select one of the following: ¹		4
MATH 420	Finite Mathematics	
MATH 424B	Calculus for Life Sciences	
MATH 425	Calculus I	
COMP 500	Discrete Structures	

Introductory Core

COMP 405	Introduction to Internet and Web Authoring (may be used to satisfy the Environment, Technology and Society, Discovery breadth requirement)	4
COMP 425	Introduction to Programming	4
COMP 430	Systems Fundamentals	4
COMP 530	Machine and Network Architecture	4

Intermediate Core

COMP 520	Database Design and Development	4
COMP 525	Data Structures Fundamentals	4
COMP 550	Networking Concepts	4
COMP 560	Ethics and the Law in the Digital Age (may be used to satisfy Humanities requirement)	4

Integrative and Professional Experience

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COMP 715	Information Security	4
COMP 730	Object-Oriented Software Development	4
UMST 582	Internship and Career Planning Seminar (one credit)	1
COMP 690	Internship Experience	4
COMP 790	Capstone Project (satisfies the Discovery senior capstone experience requirement)	4
CIS Electives		
Select three courses of COMP courses not already applied to the major ²		12
Concentration		
Select four courses ³		16
Total Credits		81

¹ Any of these courses, except for COMP 500 Discrete Structures, may be used to satisfy the Quantitative Reasoning Discovery requirement.

² No COMP 400-level courses or other major courses without permission from adviser.

³ Majors can creatively design a concentration of courses that meet their academic and professional goals and career plans. Four courses can be selected across a wide university curriculum, reflecting majors' interests in a liberal arts, scientific, engineering, interdisciplinary, or professional area of study. The concentration must be approved by the student's adviser before the student's junior year.

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