INFORMATION TECHNOLOGY MAJOR (B.S.)

https://ceps.unh.edu/computer-science/program/bs/information-technology

Description

Information technology is concerned primarily with the application of existing computing technologies to the information needs of organizations and individual computer users. The IT program aims to provide graduates with the skills and knowledge to take on appropriate professional positions in information technology upon graduation and grow into leadership positions in the field. Potential careers include network administrator, database developer, system administrator, and webmaster.

The broad objectives for B.S. in information technology graduates are:

1. Apply the full range of core IT concepts and techniques to fill the IT needs of an organization and be prepared to assume managerial and other advanced responsibilities,
2. Confront new problems effectively and anticipate the changing directions of technology,
3. Communicate effectively with diverse stakeholders as well as function appropriately in a team environment,
4. Navigate within the complex relationships between IT and larger organizational goals, and
5. Understand the pervasive and changing role of computing technology in global society, and participate responsibly as both IT professional and citizen.

The B.S. in information technology program is accredited by the Computing Accreditation Commission of ABET.

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: No

All Major, Option and Elective Requirements as indicated.
Major GPA requirements as indicated.

Major Requirements

Information technology majors must maintain an overall grade-point average of 2.0 or better in all required information technology and computer science required 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 an IT major. In order to meet the IT major requirements, the following courses must be passed with a grade of C- or

better: CS 410P, CS 410C, CS 414, CS 415, CS 416, CS 417, IT 403, IT 505, IT 520.

If a student wishing to transfer into the information technology 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 information technology. The student must have an overall grade-point average of 2.0 or better in all courses taken at the University.

In addition to the core IT requirements, each student must complete a complementary set of courses in a particular domain outside of IT to which the student's IT skills can be applied. This set of courses can be completed in one of the following ways: (1) An approved minor; or (2) A second major or UNH dual degree. *A list of preapproved minors is available from the CS Department and requires at least (5) courses to complete.*

Required Courses

Code	Title	Credits
Information Technology Courses		
CS 400	Introduction to Computing	2
CS 415	Introduction to Computer Science I [1]	4
or CS 410C	Introduction to Scientific Programming/C	
or CS 410P	Introduction to Scientific Programming/Python	
or CS 414		
CS 417	From Programs to Computer Science [1]	4
CS 501	Professional Ethics and Communication in Technology-related Fields	4
CS 518	Introduction to Software Engineering	4
CS 527	Fundamentals of Cybersecurity	4
IT 403	Introduction to Internet Technologies	4
IT 505	Integrative Programming	4
IT 520	Foundations of Information Technology	4
IT 609	Network/Systems Administration	4
IT 699	Internship	1
IT 705	Project Management for Information Technology	4
IT 775	Database Technology	4
IT 791	Senior Project I	4
& IT 792	and Senior Project II	
IT Electives		
Select three courses from the following:		12
IT 502	Intermediate Web Design	
IT 604	Server-side Web Development	
IT 605	Full-Stack Web Development	
IT 612	Scripting Languages	
IT 630	Data Science and Big Data Analytics	
IT 666	Cybersecurity Practices	
IT 718	Cloud Computing Principles	
IT 725	Network Technology	
IT 780		
Mathematics Courses		
MATH 425	Calculus I	4
MATH 539	Introduction to Statistical Analysis	4
Science Courses [2]		
One Discovery Biological Science (BS) with Discovery Lab		4
One Discovery Physical Science (PS) with Discovery Lab		4
Other Courses		
Discovery requirements not already covered by required courses		24
General Electives		6-8
Minor, Second Major, or Dual Degree		20
Total Credits		**129-131**

[1] Starting in 2022-2023, all Information technology majors will be recommended to take CS 415 Introduction to Computer Science I and CS 417 From Programs to Computer Science as their two-semester sequence. CS 414 will be discontinued starting Fall 2022.

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

Degree Plan

Sample Degree Plan

This sample degree plan serves as a general guide; students collaborate with their academic advisor to develop a personalized degree plan to meet their academic goals and program requirements.

First Year

Fall

		Credits
CS 400	Introduction to Computing	2
CS 415	Introduction to Computer Science I	4
IT 403	Introduction to Internet Technologies	4
MATH 425	Calculus I	4
Discovery		4
	Credits	18

Spring

CS 417	From Programs to Computer Science	4
ENGL 401	First-Year Writing (Discovery)	4
Discovery		4
Physical Science (DLAB)		4
	Credits	16

Second Year

Fall

IT 505	Integrative Programming	4
IT 520	Foundations of Information Technology	4
CS 501	Professional Ethics and Communication in Technology-related Fields	4
Discovery		4
	Credits	16

Spring

CS 518	Introduction to Software Engineering	4
CS 527	Fundamentals of Cybersecurity	4
MATH 539	Introduction to Statistical Analysis	4
Biological Science (DLAB)		4
	Credits	16

Third Year

Fall

IT 609	Network/Systems Administration	4
IT 705	Project Management for Information Technology	4
IT Elective (1 of 3)		4
Minor (1 of 5)		4
	Credits	16

Spring

IT 699	Internship	1
IT 775	Database Technology	4
Minor (2 of 5)		4
Discovery		4
Free Elective		4
	Credits	17

Fourth Year

Fall

IT 791	Senior Project I	2
IT Elective (2 of 3)		4
Minor (3 of 5)		4
Discovery		4
Free Elective (optional)		
	Credits	14

Spring

IT 792	Senior Project II	2
IT Elective (3 of 3)		4
Minor (4 of 5)		4
Minor (5 of 5)		4
Free Elective or Fourth Writing Intensive		4
	Credits	18
	Total Credits	**131**

Student Learning Outcomes

Program Learning Outcomes
Students will be able 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.
- Identify and analyze user needs and to take them into account in the selection, creation, integration, evaluation, and administration of computing-based systems.
- Self-learning skills, exposure to technologies new to the students, practice in understanding those technologies on their own.