

# 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

Code	Title	Credits
<b>Information Technology Courses</b>		
CS 400	Introduction to Computing	2
CS 415	Introduction to Computer Science I <sup>1</sup>	4
or CS 410C	Introduction to Scientific Programming/C	
or CS 410P	Introduction to Scientific Programming/Python	
or CS 414	From Problems to Algorithms to Programs	

CS 417	From Programs to Computer Science <sup>1</sup>	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	Computer Architecture	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 & IT 792	Senior Project I and Senior Project II	4
<b>IT Electives (select three)</b>		<b>12</b>
IT 502	Intermediate Web Design	
IT 604	Server-side Web Development	
IT 605	Client-side Web Development	
IT 612	Scripting Languages	
IT 630	Data Science and Big Data Analytics	
IT 666	Cybersecurity Practices	
IT #704	Advanced Web Development	
IT 718	Cloud Computing Principles	
IT 725	Network Technology	
IT 780	Topics in Information Technology	
<b>Mathematics Courses</b>		
MATH 425	Calculus I	4
MATH 539	Introduction to Statistical Analysis	4
<b>Science Courses <sup>2</sup></b>		
One Discovery Biological Science (BS) with Discovery Lab		4
One Discovery Physical Science (PS) with Discovery Lab		4
<b>Other Courses</b>		
Discovery requirements not already covered by required courses		24
General Electives		6-8
<b>Minor, Second Major, or Dual Degree</b>		<b>20</b>
<b>Total Credits</b>		<b>129-131</b>

<sup>1</sup> 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 From Problems to Algorithms to Programs will be discontinued starting Fall 2022.

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

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\*\*;
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.

## Degree Plan

The following is a sample schedule depicting the necessary requirements and the layout of the curriculum. Students must consult with their advisers in order to come up with the proper schedule for themselves.

### First Year

Fall		Credits
CS 400	Introduction to Computing	2
CS 415	Introduction to Computer Science I	0-4
IT 403	Introduction to Internet Technologies	4
MATH 425	Calculus I	4
Discovery		4
<b>Credits</b>		<b>14-18</b>

### Spring

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

### Second Year

Fall		Credits
IT 505	Integrative Programming	4
IT 520	Computer Architecture	4
CS 501	Professional Ethics and Communication in Technology-related Fields	4
Discovery		4
<b>Credits</b>		<b>16</b>

### 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
<b>Credits</b>		<b>16</b>

### Third Year

Fall		Credits
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
<b>Credits</b>		<b>16</b>

### Spring

IT 699	Internship	1
IT 775	Database Technology	4
Minor (2 of 5)		4
Discovery		4

Free Elective	4
<b>Credits</b>	<b>17</b>

### 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)		
<b>Credits</b>		<b>14</b>

#### 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
<b>Credits</b>		<b>18</b>
<b>Total Credits</b>		<b>127-131</b>

## Student 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.