COMPUTER INFORMATION TECHNOLOGY MAJOR: ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING OPTION (B.S.)

Description

The major in Computer Information Technology focuses on information, its management, and processing within an organization, as well as the application of technology to create, exchange, store, and use information in that context. The focus is on the business use of information and the application of computing technology. Graduates will typically follow career paths as application development programmers, planners, and designers of information systems, as well as information systems managers within organizations. The degree provides versatility through a best practices approach to the core areas of Information Technology.

Requirements

Degree Requirements

Minimum Credit Requirement: 120 credits

Minimum Residency Requirement: 30 credits must be taken at UNH

Minimum Cumulative GPA: 2.0 is required for conferral*

Core Curriculum Required: General Education Program

Major, Option and Elective Requirements as indicated.

GPA: Major and any state certification GPA requirements may be higher and are indicated in program details.

A minimum grade of C- is required in all Major coursework. Some programs may have higher grade requirements for Major coursework as noted in the Major requirements section below. Students are allowed a maximum of two course overlaps. Overlaps can be used between Major, Minor, and General Education requirements with only 8 credits overlapped between the Major and Minor. Please note that Option requirements are considered part of the Major. Students must complete 16 upper-level credits in majors within the College of Professional Studies, Online.

General Education Program Requirements

A minimum grade of D- is required in all General Education coursework. Students are allowed a maximum of two course overlaps. Overlaps can be used between Major, Minor and General Education requirements with only 8 credits overlapped between the Major and Minor.

All General Education requirements must be taken prior to the capstone.

Code	Title	Credits
ENG 420	The Writing Process	4
COM 460	Interpersonal Communication and Group Dynamics	4
COM 480	Visual Communication	4
CRIT 501	Introduction to Critical Inquiry	4

Code	Title	Credits
Select one of the following:		4
MTH 402	Math for Our World	
MTH 504	Statistics	
MTH 510	Pre-Calculus	
Knowledge of Human Behavior & Social Systems		4
Knowledge of the Physical & Natural World		4
Knowledge of Human Thought & Expression		4
CRIT 602	Advanced Critical Analysis and Strategic Thinking	4
IDIS 601A	Interdisciplinary Seminar: Being Happy	4
or IDIS 601B	Interdisciplinary Seminar: Business of Beer	
or IDIS 601C	Interdisciplinary Seminar: Paranormal Activities	
Total Credits		**40**

Writing Program Requirements

All bachelor's degree candidates are required to complete four writing intensive courses as part of the University Writing Program Requirements as follows:

Code	Title	Credits
ENG 420	The Writing Process	
One Writing Intensive course in the Major		
One Writing Intensive course at the 600-level or above		
One Additional Writing Intensive Course		

Writing Intensive courses are identified with the label "Writing Intensive Course" in the "Attributes" section of the course description and/or a W following the course number.

Major Requirements

Code	Title	Credits
Required Courses		
Foundation Courses		
CMPL 415	Programming Fundamentals	4
CMPL 512	Advanced Software Tools	4
CMPL 525	Foundations of Cybersecurity	4
Intermediate Courses		
CMPL 614	Computer and Network Systems	4
CMPL 622	Human Computer Interaction	4
MTH 504	Statistics	4
Advanced Courses		
CMPL 620	Virtualization and Cloud Computing	4
CMPL 641	Database Management Systems	4
CMPL 642	Systems Analysis and Design	4
Option in Artificial Intelligence and Machine Learning		
CMPL 570	Foundations of AI: A Business Perspective	4
CMPL 572	Foundations of Machine Learning	4
CMPL 610	Artificial Intelligence for Information Technology Professionals	4
CMPL 618	Mathematics for AI and Machine Learning	4
CMPL 750	Programming for AI with Python	4
Integrative Capstone		
CMPL 795	Integrative Capstone: Internship in Computer Information Tech and Tech Management	4
or CMPL 797	Integrative Capstone: Best Practices in Information Technology	
Total Credits		**60**

Electives

Open electives are courses students will need to take in addition to their general education and major requirements in order to satisfy the remaining credit totals for their programs. Open electives are defined as any credit course offered by the College not already included in the student's general education, major, option or minor. Students will need 120 credits total to graduate with a bachelor's degree from the Online Division of the College of Professional Studies.

Degree Plan

This degree plan is a sample and does not reflect the impact of transfer credit or current course offerings. UNH CPS Online undergraduate students should develop individual academic plans with their academic advisor during their first year at UNH.

Sample Course Sequence

First Year

Fall

		Credits
CMPL 415	Programming Fundamentals	4
CMPL 525	Foundations of Cybersecurity	4
ENG 420	The Writing Process	4
General Education Course		4
	Credits	**16**

Spring

CMPL 512	Advanced Software Tools	4
COM 460	Interpersonal Communication and Group Dynamics	4
CRIT 501	Introduction to Critical Inquiry	4
MTH 402 or MTH 504 or MTH 510	Math for Our World or Statistics or Pre-Calculus	4
	Credits	**16**

Second Year

Fall

CMPL 614	Computer and Network Systems	4
COM 480	Visual Communication	4
General Education Course		4
Elective Course		4
	Credits	**16**

Spring

CMPL 622	Human Computer Interaction	4
MTH 504	Statistics	4
General Education Course		4
Elective Course		4
	Credits	**16**

Third Year

Fall

CMPL 570	Foundations of AI: A Business Perspective	4
CMPL 572	Foundations of Machine Learning	4
CMPL 610	Artificial Intelligence for Information Technology Professionals	4
Elective Course		4
	Credits	**16**

Spring

CMPL 618	Mathematics for AI and Machine Learning	4
CMPL 620	Virtualization and Cloud Computing	4
CMPL 641	Database Management Systems	4
CRIT 602	Advanced Critical Analysis and Strategic Thinking	4
	Credits	**16**

Fourth Year

Fall

CMPL 750	Programming for AI with Python	4
CMPL 642	Systems Analysis and Design	4
IDIS 601A or IDIS 601B or IDIS 601C	Interdisciplinary Seminar: Being Happy or Interdisciplinary Seminar: Business of Beer or Interdisciplinary Seminar: Paranormal Activities	4
Elective Course		4
	Credits	**16**

Spring

CMPL 797 or CMPL 795	Integrative Capstone: Best Practices in Information Technology or Integrative Capstone: Internship in Computer Information Tech and Tech Management	4
Elective Course		4
	Credits	**8**
	Total Credits	**120**

Student Learning Outcomes

Program Learning Outcomes

- Address the needs of organizational IT challenges using software programming fundamentals, network systems design, machine learning techniques, database management, code libraries, and web-based interface and application development.
- Develop solutions to IT challenges according to process models that align with information technology theories and industry-based strategies.
- Use applied analysis and evaluation strategies to plan, gather information, execute, optimize, and troubleshoot hardware, software, and network systems.
- Assess the needs of IT system end-users and develop strategies to fulfill them through hardware- and software-based design solutions.
- Develop cybersecurity strategies for the legal and ethical use of cryptography to protect IT assets from criminal threats.