INFORMATION ASSURANCE CONCENTRATION

Computer Science, Bachelor of Science in Computer Science - Information Assurance Concentration Requirements

The information assurance concentration is intended for students who wish to specialize in the security aspects of the computer science field. The concentration focuses on fundamental principles, worked examples, theory, and skills necessary to analyze, design, and construct secure information systems. The courses in this concentration address fundamental technologies, security policy, assurance, and ethics involved in the protection of the information systems. Hands-on experience is gained through numerous programming exercises associated with each course.

Code	Title	Credits
General Education Requirements - 34 Hours Required		
Minimum of "C-"required		
Fundamental Skills		**15**
Writing – 6 hrs.		
ENGL 1150	ENGLISH COMPOSITION I	
ENGL 1160	COLLEGE RESEARCH AND INFORMATION LITERACY	
Oral Communication – 3 hrs.		
CMST 1110	PUBLIC SPEAKING FUNDS	
or CMST 2120	ARGUMENTATION AND DEBATE	
Quantitative Literacy – 3 hrs.		
MATH 1120	INTRODUCTION TO MATHEMATICAL AND COMPUTATIONAL THINKING	
or MATH 1130	QUANTITATIVE LITERACY	
or MATH 1140	QUANTITATIVE REASONING FOR HEALTHCARE PROFESSIONALS	
or MATH 1300	COLLEGE ALGEBRA WITH SUPPORT	
Data Literacy – 3 hrs.		
Select one from the following:		
STAT 1100	DATA LITERACY AND VISUALIZATION	
STAT 1530	ELEMENTARY STATISTICS	
Until Fall 2028, students can satisfy this requirement with an approved data literacy course, or any approved natural or social science general education course.		
Breadth of Knowledge		**13**
Social Science – 3 hrs.		
Humanities – 3 hrs.		
Natural & Physical Science (must complete a lab) – 4 hrs.		
Arts – 3 hrs.		
Individual and Social Responsibility		**6**
Cultural Knowledge – 3 hrs.		
Civic Knowledge and Engagement – 3 hrs.		
MAJOR REQUIREMENTS - 85 Hours Required		
**Course will satisfy UNO's General Education requirement		
^Course requires pre-requisite(s)		
All of the following:		**42**
CIST 1400	INTRODUCTION TO COMPUTER SCIENCE I (^)	
CSCI 1620	INTRODUCTION TO COMPUTER SCIENCE II (^)	
CSCI 2240	INTRODUCTION TO C PROGRAMMING (^)	
CIST 3000	TECHNICAL WRITING & COMMUNICATION FOR IS&T (^)	
CIST 3110	INFORMATION TECHNOLOGY ETHICS (** ^)	
CSCI 3320	DATA STRUCTURES (^)	
CSCI 3550	COMMUNICATION NETWORKS (^)	
or CSCI 4350	COMPUTER ARCHITECTURE	
CSCI 3660	THEORY OF COMPUTATION (^)	
CSCI 3720	COMPUTER ORGANIZATION (^)	
CSCI 4100	INTRODUCTION TO ALGORITHMS (^)	
CSCI 4220	PRINCIPLES OF PROGRAMMING LANGUAGES (^)	
CSCI 4500	OPERATING SYSTEMS (^)	
CSCI 4830	INTRODUCTION SOFTWARE ENGINEERING (^)	
CSCI 4970	CAPSTONE PROJECT (^)	
CSCI 4000	ASSESSMENT (^)	
Information Assurance Concentration - 18 Hours		
All of the following:		**9**
CYBR 3600	CYBERSECURITY POLICY AND AWARENESS (^)	
CYBR 3050	PRINCIPLES OF CYBER OPERATIONS AND DEFENSE	
or CYBR 4360	PRINCIPLES OF SECURE SYSTEM DESIGN	
CSCI 4380	DIGITAL FORENSICS (^)	
Select 3 courses from the following:		**9**
CYBR 2600	SYSTEM ADMINISTRATION (^)	
CSCI 3450	NATURAL LANGUAGE PROCESSING (^)	
CYBR 4390	MOBILE DEVICE FORENSICS (^)	
CYBR/CSCI 4430	QUANTUM COMPUTING AND CRYPTOGRAPHY (^)	
CYBR 4440	INDUSTRIAL CONTROL SYSTEM SECURITY (^)	
CYBR 4450	ETHICAL HACKING - MALWARE ANALYSIS (^)	
CYBR 4460	ETHICAL HACKING - NETWORK ANALYSIS (^)	
CYBR 4540	COMPUTER SECURITY MANAGEMENT (^)	
CSCI/MATH 4560	NUMBER THEORY & CRYPTOGRAPHY (^)	
or CYBR 3570	CRYPTOGRAPHY	
Extension Courses - Complete 3 credit hours		**3**
Complete 3 additional hours of upper-level CSCI coursework (3XXX or 4XXX level) not used to meet other degree or concentration requirements. [1]		
Math Courses - All of the following:		**15**
MATH 1950	CALCULUS I (^)	
CSCI 2030	MATHEMATICAL FOUNDATIONS OF COMPUTER SCIENCE (^)	
CSCI 2040	INTRODUCTION TO MATHEMATICAL PROOFS (^)	
MATH 2050	APPLIED LINEAR ALGEBRA (^)	
CIST 2500	INTRODUCTION TO APPLIED STATISTICS FOR IS&T (^)	

Science Courses - Complete 7 credit hours from the following list, representing at least 2 disciplines with a minimum of 1 laboratory course**		**7**
PHYS 1050	INTRODUCTION TO PHYSICS (**)	
PHYS 1054	INTRODUCTION TO PHYSICS LABORATORY (**)	
PHYS 1110	PHYSICS FOR LIFE SCIENCE I (** ^)	
PHYS 1154	GENERAL PHYSICS LABORATORY I (** ^)	
PHYS 2110	GENERAL PHYSICS I - CALCULUS LEVEL (** ^)	
CHEM 1010	CHEMISTRY IN THE ENVIRONMENT AND SOCIETY (** ^)	
CHEM 1014	CHEMISTRY IN THE ENVIRONMENT AND SOCIETY LABORATORY (** ^)	
CHEM 1140	FUNDAMENTALS OF COLLEGE CHEMISTRY (** ^)	
CHEM 1144	FUNDAMENTALS OF COLLEGE CHEMISTRY LABORATORY (** ^)	
CHEM 1170	GENERAL CHEMISTRY I-II (** ^)	
CHEM 1180	GENERAL CHEMISTRY I (** ^)	
CHEM 1184	GENERAL CHEMISTRY I LABORATORY (** ^)	
BIOL 1450	BIOLOGY I (** ^)	
BMCH 2400	HUMAN PHYSIOLOGY & ANATOMY I (**)	
GEOL 1170	INTRODUCTION TO PHYSICAL GEOLOGY (**)	
GEOL 1100	EARTH SYSTEM SCIENCE (**)	
GEOL 1104	EARTH SYSTEM SCIENCE LAB (**)	
GEOG 1030	OUR DYNAMIC PLANET: INTRODUCTION TO PHYSICAL GEOGRAPHY (**)	
GEOG 1050	HUMAN-ENVIRONMENT GEOGRAPHY (**)	
GEOG 1090	INTRODUCTION TO GEOSPATIAL SCIENCES (**)	
GEOG 3510	METEOROLOGY (**)	
GEOG 3514	INTRODUCTION TO METEOROLOGY LABORATORY (** ^)	
ELECTIVES		
Elective hours as required to reach a total of 120 hours		

[1] Upper-level CSCI transfer credits can also be applied towards this requirement.