CYBERSECURITY, B.S.

Credits: 122
CIS Code: 11.0103

Program Description

The Bachelor of Science Degree in Cybersecurity focuses on integrating information technology solutions and business processes to meet the information needs of businesses and other enterprises, enabling them to achieve their objectives in an effective, efficient way. The program views technology as an instrument for generating, processing, and distributing information.

The program curricula emphasizes on information that computer systems can provide to aid an enterprise in defining and achieving its goals, and the processes that an enterprise can implement or improve using information technology. A wide range of courses including coursework in business are offered to prepare students to understand both technical factors and organizational principles and practices that can help them develop an organization's information and technology-enabled business processes.

Students in this program are involved in designing technology-based organizational communication and collaboration system enabling them to determine an organization's requirements for information systems specification, design, and implementation needed to support its operations.

Admissions Requirements

Applicants to the Bachelor of Science Degree in Computer and Information Systems must meet the General Admissions Requirements as published in this Catalog.

Student Learning Outcomes

Graduates of the Cybersecurity program will be able to:

1. Apply knowledge of computing and mathematics appropriate to the discipline.
2. Analyze a Cybersecurity problem, and identify and define the computing requirements appropriate to its solution.
3. Design, implement, and evaluate a Cybersecurity system, process, component, or program to meet desired needs.
4. Function effectively in teams to accomplish a common goal.
5. Understand the ethical, legal, security and social issues and responsibilities of Cybersecurity professionals.

Degree Requirements

Requires a minimum of one hundred and twenty-five (122) semester hours, including sixty-three (63) in Computer and Information Systems. Two (2) semesters of science classes with laboratory are required either in Biological Science and Physical Science or Earth System Science. Students must complete all required Computer Science courses with a minimum final grade of "C".

Code	Title	Hours
Required Courses		
CCIS 101	Introduction to Computers	3
CCIS 105	Programming Principles I	3
CCIS 105L	Programming Principles I Lab	1
CCIS 106	Programming Principles II	3
CCIS 106L	Programming Principles II Lab	1
CCIS 121	Introduction to Computer Sys	3
CCIS 223	Data Structures	3
CCIS 223L	Data Structures Lab	1
CCIS 227	Discrete Structures	3
CCIS 321	Software Engineering	3
CCIS 329	Rich Internet Applications	3
CCIS 371	Computer Algorithms	3
CCIS 372	Computer Architecture	3
CCIS 374	Database Systems	3
CCIS 375	Intro to Artificial Intel	3
CCIS 431	Cybersecurity I	3
CCIS 473	Intro to Operating Systems	3
CCIS 476	Programming Langs. & Compilers	3
CCIS 493	Senior Design Project	3
CCIS 4XX	Cybersecurity II	3
CCIS 4XX	Cybersecurity Elective	3
CCIS 4XX	Cybersecurity Elective	3
Cognate Courses		
CMAT 111	Calculus I	4
CMAT 112	Calculus II	4
CMAT 214	Linear Algebra	3
or CMAT 311	Mathematical Logic	
Total Hours		**71**

General Education Courses

Code	Title	Hours
Area A: Humanities/Fine Arts		
Select one of the following:		3
CPHI 105	Critical Thinking	
CREL 101	The Biblical Heritage	
CREL 103	Afr Amer Religious Experiences	
Select one of the following:		3
CHIS 201	United States,Africa & World	
CHIS 211	History of the United States	
Area B: Social/Behavioral Sciences		
Select six credits of the following:		6
CPSY 211	General Psychology	
CPSC 219	American Govern & Politics	
CSCJ 215	Intro. to Sociology	
CSCJ 216	Intro. to Anthropology	
CSCJ 218	Contemporary Social Problems	
CSCJ 201	Intro. to Criminal Justice	
Area C: Natural Sciences/Mathematics/Statistics		
CBIO 101	Biological Science	3
CPHY 102	Physical Science	3
Area D: Communications		
CENG 105	College Composition I	3
CENG 106	College Composition II	3
CSTA 101	Fundamentals of Speech	3
Area E: Financial/Technological		
CCIS 253 & 253L	Intro. to Comp. Sim/Analysis and Intro. to Comp. Sim/Analy(Lab)	4

CECO 107	Introduction to Economics	3
Total Hours		**34**

Other University Requirements

Code	Title	Hours
CGED 100	First Year Seminar	1
CGED 101	1st-Year Seminar	1
Total Hours		**2**

Free Electives: 12 Credits

Note: Free Electives should be chosen in consultation with the advisor, depending on the choice of minor or stackable credentials.

Plan of Study for Bachelor of Science Degree in Cybersecurity

*(Students who are **not** prepared to complete calculus in their first year of study should arrange a revised plan of study in consultation with an advisor.)*

Course	Title	Hours
First Year		
First Semester		
CCIS 101	Introduction to Computers	3
CENG 105	College Composition I	3
CGED 100	First Year Seminar	1
CMAT 111	Calculus I	4
CCIS 105	Programming Principles I	3
CCIS 105L	Programming Principles I Lab	1
	Hours	**15**
Second Semester		
CENG 106	College Composition II	3
CGED 101	1st-Year Seminar	1
CMAT 112	Calculus II	4
CCIS 106	Programming Principles II	3
CCIS 106L	Programming Principles II Lab	1
CCIS 121	Introduction to Computer Sys	3
	Hours	**15**
Second Year		
First Semester		
CBIO 101	Biological Science	3
CMAT 214 or CMAT 311	Linear Algebra or Mathematical Logic	3
CXXX	Area A ,B, C, D	3
CXXX	Area A ,B, C, D	3
CCIS 223	Data Structures	3
CCIS 223L	Data Structures Lab	1
	Hours	**16**
Second Semester		
CPHY 102	Physical Science	3
CCIS 253 & 253L	Intro. to Comp. Sim/Analysis and Intro. to Comp. Sim/Analy(Lab)	4
CXXX	Area A ,B, C, D	3
CXXX	Area A ,B, C, D	3

Course	Title	Hours
CCIS 227	Discrete Structures	3
	Hours	**16**
Third Year		
First Semester		
CCIS 301	Advanced Programming	3
CXXX	Area A ,B, C, D	3
CCIS 321	Software Engineering	3
CCIS 374	Database Systems	3
CCIS 375	Intro to Artificial Intel	3
	Hours	**15**
Second Semester		
CXXX	Free Elective	3
CCIS 329	Rich Internet Applications	3
CCIS 371	Computer Algorithms	3
CCIS 372	Computer Architecture	3
CXXX	Area A ,B, C, D	3
	Hours	**15**
Fourth Year		
First Semester		
CCIS 431	Cybersecurity I	3
CCIS 476	Programming Langs. & Compilers	3
CCIS 400	Cybersecurity Elective [1]	3
CCIS 400	Free Elective [1]	3
CXXX	Free Elective	3
	Hours	**15**
Second Semester		
CCIS 473	Intro to Operating Systems	3
CCIS 493	Senior Design Project	3
CCIS 432	Cybersecurity II	3
CCIS 400	Cybersecurity Elective [1]	3
CXXX	Free Elective	3
	Hours	**15**
	Total Hours	**122**

[1] Computer Science Electives must be at the 400 level or above.