Cybersecurity, BS

Bachelor of Science (B.S.) in Cybersecurity

Degree Requirements

Students must choose one of the following emphasis areas at the time of application for admission.

- Computer Science (CS) Emphasis (total 120 credit hours)
- Information Systems (IS) Emphasis (total ~~126~~ 123 credit hours)

Degree requirements vary depending on the chosen emphasis area (see common and emphasis area required courses and credit hours below).

General Education Requirements

Students must satisfy the university general education requirements. Many of the courses for the degree may be used to fulfill general education requirements. There is no foreign language requirement for this degree.

Satisfactory/Unsatisfactory Option

Courses required for the major may not be taken on a satisfactory/unsatisfactory basis.

Required Courses

The degree requires ~~36~~ 33 credit hours of core coursework applicable to both emphasis areas. Emphasis specific required courses are listed below. Please see 4-year degree plans for recommend course sequences within each emphasis.

Required Core Courses

ENGL 3120	Business Writing	3
or ENGL 3130	Technical Writing	
CMP SCI 1250	Introduction to Computing	3
CMP SCI 2250	Programming and Data Structures	3

CMP SCI 2261	Object-Oriented Programming	3
CMP SCI 2700	Computer Organization and Architecture	3
CMP SCI 2750	System Programming and Tools	3
~~MATH 3000~~	~~Discrete Structures~~	~~3~~
INFSYS 3848	Introduction to Information Security	3
or CMP SCI 3702	Cyber Threats and Defense	
INFSYS 3868	Secure Software Development	3
INFSYS 3878	Information Security Risk Management and Business Continuity	3
CMP SCI 4700	Computer Forensics	3
CMP SCI 4732	Introduction to Cryptography for Computer Security	3
Total Hours		**33**

Computer Science Emphasis

In addition to the ~~36~~ 33 credit hours of core required coursework, the B.S. Cybersecurity degree with Computer Science emphasis requires ~~44~~ 42-44 credit hours of emphasis specific course work. Thus, candidates for the B.S. in Cybersecurity degree with Computer Science emphasis must complete a major program of ~~80~~ 75-77 (~~36~~ 33 core + ~~44~~ 42-44 emphasis specific) credit hours of required courses.

For the Computer Science emphasis all general degree requirements from the College of Arts and Science apply.

MATH 1320	Introduction to Probability and Statistics	3
MATH 1100	Basic Calculus	3-5
or MATH 1800	Analytic Geometry and Calculus I	~~5~~
MATH 3000	Discrete Structures	3
CMP SCI 3010	Web Programming	3

CMP SCI 3130	Design and Analysis of Algorithms	3
~~CMP SCI 3760~~	~~Cyber Threats and Defense~~	~~3~~
CMP SCI 3780	Software Security	3
CMP SCI 4730	Computer Networks and Communications	3
CMP SCI 4750	Introduction to Cloud Computing	3
CMP SCI 4760	Operating Systems	3
CMP SCI 4782	Information Security	3
CMP SCI 4794	Introduction to Security of IoT Systems	3
Electives (choose 3 from following)		9
PHIL 1160	Critical Thinking (MOTR PHIL 101)	
PHIL 2254	Business Ethics	
CRIMIN 1100	Introduction to Criminology and Criminal Justice	
CRIMIN 3310	Computers in Criminal Justice	
CMP SCI 3990	Undergraduate Internship in Computer Science	
CMP SCI 4020	Introduction to Android Apps: Android Fundamentals	
CMP SCI 4220	Introduction to iOS Programming and Apps	
CMP SCI 4222	iOS Apps	
CMP SCI 4300	Introduction to Artificial Intelligence	
CMP SCI 4500	Introduction to the Software Profession	
CMP SCI 4610	Database Management Systems	
CMP SCI 4792	Mobile and Ubiquitous Computing	
INFSYS 3858	Advanced Security and Information Systems	

INFSYS 3898	Seminar in Information Systems	
Other electives upon approval of Computer Science department chair		
Total Hours		**42-44**

Information Systems Emphasis

In addition to the ~~36~~ 33 credit hours of core required coursework, the B.S. Cybersecurity degree with Information Systems emphasis requires 75 credit hours of emphasis specific coursework (48 general business + 27 program specific). Thus, candidates for the B.S. in Cybersecurity degree with Information Systems emphasis must complete a program of ~~111~~ 108 (~~36~~ 33 core + 75 emphasis specific) credit hours of required courses.

For the Information Systems emphasis all general degree requirements from the College of Business Administration apply.

INFSYS 3820	Introduction to Systems Administration	~~0~~ 3
INFSYS 3842	Data Networks and Security	3
INFSYS 3806	Managerial Applications of Object-Oriented Programming I	3
INFSYS 3815	Object-Oriented Applications in Business	3
INFSYS 3845	Database Management Systems	3
INFSYS 3858	Advanced Security and Information Systems	3
SCMA 4347	Introduction to Project Management	3
Major Specific Electives (choose 2 from following)		6
BUS AD 3090	Internship in Business Administration	
INFSYS 3830	Data Programming	
INFSYS 3862	Artificial Intelligence Applications for Business	
INFSYS 3864	Applied Cryptography for Business	

INFSYS 3898	Seminar in Information Systems [1]	
CMP SCI 4782	Information Security	
CMP SCI 4750	Introduction to Cloud Computing	
SCMA 3345	Predictive Analytics and Data Mining	
SCMA 4350	Prescriptive Analytics and Optimization	
SCMA 3376/MKTG 3776	Transportation Security and Risk	
Other electives upon approval of Information Systems department chair		
Total Hours		**27**

[1] If course is offered and topic is approved by the Information Systems department chair

Sign-offs from other departments affected by this proposal

Department	Contact Person	Phone #	Objections
S005150	Dinesh Merchandani	7354	No

Rationale	Moving Math 3000 to CS emphasis, we are updating some courses so that Math 3000 is no longer prereq to any of the core courses. Adding Math 1100 as alternative to 1800 in the CS emphasis area.