Cybersecurity Undergraduate Certificate

Certificate Requirements

The Undergraduate Certificate in Cybersecurity is a five-course (15 credit hours) interdisciplinary studies program. It is designed to help students from all backgrounds achieve a foundation in information security. It provides students the flexibility to focus on technical and/or managerial aspects of computer, software, network, and information security. With primary courses offered by Computer Science and Information Systems and Technology departments, the program also allows students to choose from a range of electives based on student interests. This certificate serves a broad group of managers, technical specialists, and professionals with or without a bachelor's degree. A prior background in information security is not required to enter this program. A minimum GPA of 2.5 is required for admission.

Requirements

All students must take three required courses and two electives.

Required Courses

INFSYS 3848	Introduction to Information Security	3
or CMP SCI 3702	Introduction to Cyber Threats and Defense	
CMP SCI 4730	Computer Networks and Communications	3
or INFSYS 3842	Data Networks and Security	
CMP SCI 4782	Information Security	3
or INFSYS 3858	Advanced Security and Information Systems	

Electives

Choose two of the following:		6
CMP SCI 3780	Software Security	
CMP SCI 4020	Introduction to Android Apps: Android Fundamentals	
CMP SCI 4200	Python for Scientific Computing and Data Science	
CMP SCI 4222	iOS Apps	
CMP SCI 4700	Computer Forensics	
CMP SCI 4732	Introduction to Cryptography for Computer Security	
CMP SCI 4750	Introduction to Cloud Computing	
CMP SCI 4792	Introduction to Mobile Computing, Networking, and Security	
CMP SCI 4794	Introduction to Security of IoT Systems	
INFSYS 3830	Data Programming	
INFSYS 3862	Artificial Intelligence Applications for Business	
INFSYS 3864	Applied Cryptography for Business	
INFSYS 3866	Cloud Security for Business	
INFSYS 3868	Secure Software Development	
INFSYS 3878	Information Security Risk Management and Business Continuity	
Total Hours		**15**

Students may substitute the above courses with other courses upon approval by the program adviser in either the Computer Science or Information Systems department. In all cases, 15 hours are needed to complete the Undergraduate Certificate in Cybersecurity. A minimum of three courses must be taken from UMSL. Students may not receive both the Undergraduate and the Graduate Certificate in Cybersecurity.

For more information, students can contact the program directors at cybersecurityUMSL@umsl.edu.

Learning Outcomes

Upon completion of the program, certificate earners will be able to:

- Analyze a cybersecurity problem and apply principles of cybersecurity and business decision making to identify potential solutions
- Design, implement, and evaluate a cybersecurity-based solution to meet a given set of cybersecurity and business requirements
- Describe professional responsibilities and make informed judgments in cybersecurity practice based on legal and ethical principles
- Function effectively as a member of a team engaged in activities appropriate to the cybersecurity discipline