

Cybersecurity and Operations

Our cybersecurity and operations major is intended to equip you with the knowledge and skills to defend computer operating systems, networks, and data from cyberattacks. You will be taught by faculty and experts using both theoretical and hands-on approaches to prepare you for high demand jobs.

Cybersecurity is important because it encompasses everything that pertains to protecting our sensitive data, personally identifiable information, protected health information, intellectual property, and governmental and industry information systems from theft and damage attempted by criminals and adversaries. Cybersecurity risk is increasing, driven by global connectivity and usage of cloud services to store sensitive data and personal information. Improperly configured cloud services and devices paired with increasingly sophisticated cybercriminals means the risk that organizations will suffer from a cyberattack or data breach is on the rise.

Bachelor of Science with a Major in Cybersecurity and Operations

General Education		38
Required Cybersecurity Operations Core (72 cr.)		
CSCI 160	Computer Science I	4
CSCI 161	Computer Science II	4
CSCI 221	Web Application Development and Security	4
CSCI 240	Assembly Language Programming	4
CSCI 242	Algorithms and Data Structures I	4
CSCI 258	Software Security and Design	4
CSCI 260	UNIX and Linux Systems	4
CSCI 276	Industrial Hardware Design and Security	4
CSCI 324	Reverse Engineering	4
CSCI 331	Technology and Society	4
CSCI 340	Networking	4
CSCI 390	Ethical Hacking	4
CSCI 410	Defensive Network Security	4
CSCI 420	Mobile and Wireless Security	4
CSCI 425	Applied Cryptography	4
CSCI 432	Malware Analysis	4
CSCI 450	Operating Systems	4
CSCI 460	Capstone Project (Security Related)	4
Required Support Math Courses (11-12 cr.)		
MATH 146 or MATH 165	Applied Calculus Calculus I	3-4
MATH 208	Discrete Mathematics I	4
MATH 210 or DATA 211	Elementary Statistics Applied Statistics and Data Visualization	4
Total Hours		121-122

Cybersecurity and Operations Minor

Required Core (20 cr.)		
CSCI 160	Computer Science I	4
CSCI 161	Computer Science II	4
CSCI 242	Algorithms and Data Structures I	4
CSCI 340	Networking	4
CSCI 390	Ethical Hacking	4
Options		12
Select one of the following options:		
Option 1		
CSCI 240	Assembly Language Programming	
CSCI 324	Reverse Engineering	

CSCI 432	Malware Analysis
Option 2	
CSCI 221	Web Application Development and Security
CSCI 260	UNIX and Linux Systems
CSCI 410	Defensive Network Security
Option 3	
CSCI 258	Software Security and Design
CSCI 420	Mobile and Wireless Security
CSCI 425	Applied Cryptography
Total Hours	32