

# M.S. in Cybersecurity

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## Area of Emphasis

Students must complete requirements in one of the following areas of emphasis:

- Digital Forensics (p. 1)
- Cyber Response (Defense, Incident & Attack Response) (p. 1)
- Governance & Leadership (Communication, Management, Policy, Compliance) (p. 2)
- Security Architecture (Systems, Software, Data) (p. 2)

## Digital Forensics

Digital Forensics is the scientific investigation methods used to collect, preserve, and analyze data stored on electronic media so that it can withstand legal review. The skills students learn include computer criminology, network forensics, digital evidence investigation techniques, and forensic iconology. Digital forensics is a program option commonly selected by students in law enforcement or the military.

Code	Title	Credits
<b>Core Courses</b>		<b>21</b>
CYB 700	Fundamentals of Cybersecurity	
CYB 703	Network Security	
CYB 705	Sociological Aspects of Cybersecurity	
CYB 707	Cybersecurity Program Planning and Implementation	
CYB 710	Introduction to Cryptography	
CYB 715	Managing Security Risk	
CYB 720	Communication in Cybersecurity	
<b>Digital Forensics Emphasis</b>		<b>9</b>
CYB 725	Computer Forensics and Investigations	
CYB 730	Computer Criminology	
CYB 735	Network Forensics	
<b>Capstone Courses</b>		<b>4</b>
CYB 789	Cybersecurity Pre Capstone	
CYB 790	Cybersecurity Capstone	
<b>Total Credits</b>		<b>34</b>

## Cyber Response

Cyber Response is an organized approach to monitoring, detecting, and responding to security events through each state of their lifecycle. Skills students will learn include threat identification, management, and prevention, security infrastructure, incident remediation, and active defense techniques. Cyber Response is a common track for students in System Administrator positions.

Code	Title	Credits
<b>Core Courses</b>		<b>21</b>
CYB 700	Fundamentals of Cybersecurity	
CYB 703	Network Security	
CYB 705	Sociological Aspects of Cybersecurity	
CYB 707	Cybersecurity Program Planning and Implementation	
CYB 710	Introduction to Cryptography	
CYB 715	Managing Security Risk	
CYB 720	Communication in Cybersecurity	
<b>Cyber Response Emphasis (Defense, Incident &amp; Attack Response)</b>		<b>9</b>
CYB 740	Incident Response and Remediation	
CYB 745	Secure Operating Systems	
CYB 750	Offensive Security & Threat Management	
<b>Capstone Courses</b>		<b>4</b>
CYB 789	Cybersecurity Pre Capstone	

CYB 790

Cybersecurity Capstone

**Total Credits****34**

## Governance & Leadership

Governance & Leadership is the framework for mitigating risk by assuring that information security strategies align with business objectives, and are consistent with relevant laws and regulations. Skills students will learn include executive leadership and communication, security administration, cybersecurity management, and risk management. Governance & Leadership is a track commonly selected by students in executive-level leadership or business-minded careers.

Code	Title	Credits
<b>Core Courses</b>		<b>21</b>
CYB 700	Fundamentals of Cybersecurity	
CYB 703	Network Security	
CYB 705	Sociological Aspects of Cybersecurity	
CYB 707	Cybersecurity Program Planning and Implementation	
CYB 710	Introduction to Cryptography	
CYB 715	Managing Security Risk	
CYB 720	Communication in Cybersecurity	
<b>Governance &amp; Leadership Emphasis (Communication, Management, Policy, Compliance)</b>		<b>9</b>
CYB 755	Security Administration	
CYB 760	Cybersecurity Leadership and Team Dynamics	
CYB 765	Cybersecurity Management	
<b>Capstone Courses</b>		<b>4</b>
CYB 789	Cybersecurity Pre Capstone	
CYB 790	Cybersecurity Capstone	
<b>Total Credits</b>		<b>34</b>

## Security Architecture

Security Architecture is a system's confidentiality, integrity, and availability in relation to an enterprise's overall system architecture and security process. Skills students will learn include modern cryptography, foundations of engineering secure applications, cyber-physical systems, and secure cloud computing. Security Architecture is commonly selected by students in experienced technologist careers.

Code	Title	Credits
<b>Core Courses</b>		<b>21</b>
CYB 700	Fundamentals of Cybersecurity	
CYB 703	Network Security	
CYB 705	Sociological Aspects of Cybersecurity	
CYB 707	Cybersecurity Program Planning and Implementation	
CYB 710	Introduction to Cryptography	
CYB 715	Managing Security Risk	
CYB 720	Communication in Cybersecurity	
<b>Security Architecture Emphasis</b>		<b>9</b>
CYB 770	Security Architecture	
CYB 775	Applied Cryptography	
CYB 780 or CYB 785	Software Security Cyber Physical System Security	
<b>Capstone Courses</b>		<b>4</b>
CYB 789	Cybersecurity Pre Capstone	
CYB 790	Cybersecurity Capstone	
<b>Total Credits</b>		<b>34</b>