

# CYBERSECURITY, CERTIFICATE OF ACHIEVEMENT

The Certificate of Achievement (COA) in Cybersecurity (COA in Cybersecurity) provides students with core knowledge and practical hands-on experiences either to be employed in the fast emerging and high in-demand Cybersecurity profession or pursue a higher degree in the Cybersecurity or related fields. This program will cover key areas of Cybersecurity including foundational security (e.g., authentication, authorization/access control, vulnerabilities, threats and attacks), secure coding, Cryptography, security analysis/design/engineering, digital forensics, security governance, and related topics to Society, Ethics, and the Profession. Students will use a variety of tools to solve real-life cases in the domain of Cybersecurity. The COA in Cybersecurity is following the ACM recommendations of Computing Competencies for Cybersecurity curricula.

- Explain ethical issues related to Cybersecurity including Ethical Hacking, privacy, transparency, accountability, user rights, and Artificial Intelligence (AI) bias.
- Analyze short- and long-term trends in a selected topic using credible research sources.
- Develop and justify strategies for preparing for and adapting to projected changes in the field so they will be a life-long learner beyond the classroom.

Course ID	Title	Units/ Hours
<b>Required Core Courses</b>		
CS V09	Principles of Computing	4
CS V41	IT Fundamentals	4
CS V45	Linux Fundamentals	4
CS V72	Microsoft Windows Server Fundamentals	3
CS V75	Python Programming for Cyber Security	3
CS V76	Computer Security Fundamentals	3
CS V77	Ethical Hacking Fundamentals	3
CS V78	Digital Forensics Fundamentals	3
<b>Total Units for the Certificate</b>		<b>27</b>

Year 1		Units/Hours
Fall Semester		Units/Hours
CS V09	Principles of Computing	4
CS V41	IT Fundamentals	4
CS V45	Linux Fundamentals	4
CS V72	Microsoft Windows Server Fundamentals	3
<b>Units/Hours</b>		<b>15</b>
Spring Semester		Units/Hours
CS V75	Python Programming for Cyber Security	3
CS V76	Computer Security Fundamentals	3
CS V77	Ethical Hacking Fundamentals	3
CS V78	Digital Forensics Fundamentals	3
<b>Units/Hours</b>		<b>12</b>
<b>Total Units/Hours</b>		<b>27</b>

Upon successful completion of this program, students will be able to:

- Explain the fundamental principles of Cybersecurity including common threats and attacks (e.g., Malware, Reconnaissance, Social Engineering, and so on), observing network operation, access control, Cryptography, secure coding, digital forensics, and security governance.
- Develop well-designed security systems to monitor, detect, analyze, and respond to cyberattacks, insider threats, advanced threats, and regulatory issues facing organizations.