Mathematics and Computer Science Department

Cybersecurity B.S. degree program Student Learning Outcomes

Student learning outcomes for the bachelor's degree program in cybersecurity include:

1. **Foundational Knowledge of Computer Systems**: Students will understand the basic components of computer hardware, software, operating systems, and networking necessary to analyze and secure information systems.
2. **Cybersecurity Principles and Best Practices**: Students will be able to apply knowledge of cybersecurity principles, ethics, and best practices to protect systems and data.
3. **Risk Management**: Students will be able to identify, evaluate, and mitigate risks to cybersecurity by implementing comprehensive risk management plans and policies.
4. **Cyber Threat Analysis and Response**: Students will demonstrate the ability to analyze potential cyber threats, and develop strategies for responding to and recovering from security incidents.
5. **Secure System Design and Implementation**: Students will possess the skills to design, implement, and administer secure network solutions to defend against security breaches.
6. **Cryptography**: Students will understand and be able to apply cryptographic techniques and tools for securing data in transit and at rest.
7. **Legal and Ethical Considerations**: Students will be aware of the ethical, legal, and professional responsibilities in the field, including an understanding of privacy laws and regulations related to cybersecurity.
8. **Communication Skills**: Students will be able to effectively communicate cybersecurity concepts, risks, and strategies to both technical and non-technical audiences.
9. **Incident Handling and Forensics**: Students will be prepared to perform cyber incident response and forensics, including the ability to gather, analyze, and interpret data for solving cybersecurity problems.
10. **Emerging Technologies and Trends**: Students will stay informed about current and emerging technologies and trends in cybersecurity, and be able to adapt to evolving challenges.
11. **Practical Application and Hands-on Experience**: Students will apply their knowledge to practical scenarios through labs, simulations, internships, or real-world projects to build practical skills and experience.