

# CYBERSECURITY CERTIFICATE

Cybersecurity focuses on the theoretical and practical applications of computer systems security and cyber security. This program is valuable to those who are interested in the theoretical foundations of cybersecurity and the eventual application of it to challenging real-world needs. The program will adopt a hands-on approach to develop, deploy, and maintain a secure computing environment. The program also prepares students for the various certifications in Security+ and Certified Ethical Hacker, [Cybersecurity Forensic Analyst \(CSFA\) Certification](#), and [Cisco Certified Network Associate \(CCNA\) certification](#).

## Certificate Requirements

16 credits

| Code                 | Title                                     | Credits   |
|----------------------|-------------------------------------------|-----------|
| COMP 160             | BEG. PROGRAMMING AND PROBLEM-SOLVING      | 4         |
| COMP 260             | DATABASE MANAGEMENT SYSTEMS               | 4         |
| COMP 430             | COMPUTER SECURITY                         | 4         |
| COMP 431             | ADVANCED NETWORK COMMUNICATION & SECURITY | 4         |
| <b>Total Credits</b> |                                           | <b>16</b> |

This certificate is not open to students who are earning a Computer Science major.

- Identify the different categories of network threats and attacks.
- Identify the appropriate defense mechanism(s) and its limitations given a network threat.
- Isolate threats that can and cannot be protected against using secure communication channels.
- Summarize defenses against network censorship and diagram a network for security.
- Define the architecture for public and private key cryptography and how public key infrastructure (pki) supports network security.