

CYBERSECURITY: COMPUTER SCIENCE, AS

Program code: CYCM-AS

Location: Gateway, Quinebaug Valley, Tunxis

Program Description

The Cybersecurity Associate Degree is designed to take a student with little or no information technology experience and prepare them for entry-level work in Cybersecurity. Curriculum in this program is based on topic areas, learning objectives, and goals for educating the workforce prescribed by the cybersecurity community, including the National Institute for Standards and Technology (NIST) and the National Initiative for Cybersecurity Education (NICE).

Students can choose between a focus in Computer Science or Cybersecurity: Networking, AS (CYNT-AS).

This degree is designed for immediate workforce placement. Students may also choose to transfer to a bachelor's degree program at a four-year university.

Learning Outcomes

Upon successful completion of all program requirements, graduates should be able to:

1. Design, build and test a Python program.
2. Design and build local area networks (LAN).
3. Identify the security controls required by the organization to protect the Confidentiality, Integrity, and Availability (CIA) of data and systems.
4. Evaluate computer crimes and forensic methods.
5. Implement major network authentication schemes.
6. Use hacking software tools to identify known vulnerabilities associated with a computer system, and computer network.
7. Develop risk mitigation strategies, security policies, and procedures.
8. Install network security appliances and software such as firewall and network intrusion systems.

This degree will begin to prepare students for common security certification exams such as:

- CompTIA Linux+
- CompTIA Security+
- Computer Hacking Forensic Investigator (CHFI)
- Penetration Testing and Ethical Hacking (CEH)
- ISC2's Systems Security Certified Practitioner (SSCP)

Degree Requirements

| Code | Title | Credits |
|---|-------------|---------|
| Cybersecurity General Education Core | | |
| ENG 1010 | Composition | 3 |
| MATH 1000 or higher ¹ | | 3-4 |
| Elective ARHX - Arts & Humanities Course | | 3-4 |
| Elective SCKX - Scientific Knowledge Course or Elective SCRX - Scientific Reasoning Course ² | | 3-4 |

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| Elective SBSX - Social / Behavioral Science Course or Elective HISX - Historical Knowledge Course | | 3 |
| Elective ORAX - Oral Communication Course or Elective WRIX - Written Communication II Course | | 3 |
| CCS 1001 | College and Career Success | 3 |
| Cybersecurity Program Core | | |
| CSC 1203 | Python Fundamentals | 3 |
| CST 1221 | Networking I | 4 |
| CST 2222 | Networking II | 4 |
| CST 1141 | Linux System Administration | 4 |
| CST 2161 | Virtualization and Cloud Computing | 3 |
| CYS 2111 | Network Security | 3 |
| CYS 2121 | Information Assurance and Risk Management | 3 |
| CYS 2131 | Computer Forensics and Network Intrusions | 3 |
| CYS 2151 | Ethical Hacking and Pen Testing I | 3 |
| Specialization Courses | | |
| CSC 1211 | Java I | 3 |
| CSC 2212 | Java II | 3 |
| CSC 2217 | Digital Design | 4 |
| Total Credits | | 61-64 |

¹ MATH 1600 College Algebra recommended for Computer Science track, MATH 1200 Statistics I recommended for Networking track

² Recommended: PHYS 1100 Introductory Physics

- Cyber and Homeland Security Certificate
- Cyber and Homeland Security, AS
- Cybersecurity Certificate
- Cybersecurity: Networking, AS