

# CYBERSECURITY - CAREER PATHWAY CERTIFICATE OF COMPLETION (CPCC)

## Description

The Cybersecurity Career Pathway Certificate of Completion extends knowledge and skills beyond entry-level computer networking and administration. Students will learn concepts and techniques essential for securing data and networks in both a vendor-neutral and Cisco environment.

## Program Learning Outcomes

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

1. Describe the function of the network layers as specified by the Open Systems Interconnection and the TCP/IP network models.
2. Describe the operation of network services, such as ARP, DNS, and DHCP.
3. Describe the basic operation of these network device types: router, switch, hub, bridge, WAP, WLC.
4. Describe the functions of these network security systems as deployed on the host, network, or the cloud: firewall, intrusion prevention system, advanced malware protection, web security appliance, email security appliance.
5. Describe IP subnets and communication within an IP subnet and between IP subnets.
6. Describe the relationship between VLANs and data visibility.
7. Describe the operation of ACLs applied as packet filters on the interfaces of network devices.
8. Compare and contrast deep packet inspection with packet filtering and stateful firewall operation.
9. Compare and contrast inline traffic interrogation and taps or traffic mirroring.
10. Compare and contrast the characteristics of data obtained from taps or traffic mirroring and NetFlow in the analysis of network traffic.
11. Identify potential data loss from provided traffic profiles.

## Entrance Requirements

### Academic Entrance Requirements

Required:

- CIS 140 A+ Essentials I, CIS 145 A+ Essentials II, CIS 179 Networking Essentials

Recommended:

- High school diploma or GED
- Completion of WR 065 Rhetoric and Critical Thinking II or higher or minimum placement Wr/Comm Level 7
- Completion of MTH 060 Beginning Algebra or higher or minimum placement Math Level 10
- CIS 120 Computer Concepts or equivalent skills

## Additional Program Costs (Beyond Standard Tuition/Fees and Textbooks)

### Material Costs

Required:

- 16 to 64 GB portable storage (USB or SSD drive): \$20 to \$100

Recommended:

- A desktop or laptop computer capable of running the latest version of the Windows operating system, virtual machines, and the latest version of Microsoft Office: approximately \$800
- Reliable high-speed internet access
- Industry certifications for each class (students may sit for certification testing at the conclusion of each course) range in price from \$200 to \$350
  - CCNA Cyber Ops: approximately \$200 - \$350
  - Certified Ethical Hacker: approximately \$200 - \$350
  - CompTIA Linux+: approximately \$150
  - CompTIA Security+: approximately \$200

## Course Requirements

| Course               | Title                    | Credits   |
|----------------------|--------------------------|-----------|
| <b>Core Courses</b>  |                          |           |
| CIS 279L             | Linux+                   | 4         |
| CIS 279SE            | Security+                | 4         |
| CIS 279OP            | Cybersecurity Operations | 4         |
| CIS 284EH            | Ethical Hacking          | 4         |
| <b>Total Credits</b> |                          | <b>16</b> |

## Performance Standards

- Academic Requirements:
  - Students must have a 2.0 cumulative GPA to earn a COCC certificate or degree.
  - All courses in the program must be completed with a grade of C or higher.

## Sample Plan

| <b>First Year</b>    |                          |           |
|----------------------|--------------------------|-----------|
| First Term           |                          | Credits   |
| CIS 279L             | Linux+                   | 4         |
| CIS 279OP            | Cybersecurity Operations | 4         |
| <b>Credits</b>       |                          | <b>8</b>  |
| <b>Second Term</b>   |                          |           |
| CIS 279SE            | Security+                | 4         |
| CIS 284EH            | Ethical Hacking          | 4         |
| <b>Credits</b>       |                          | <b>8</b>  |
| <b>Total Credits</b> |                          | <b>16</b> |