

NETWORKING AND CYBERSECURITY - ASSOCIATE OF APPLIED SCIENCE OPTION (AASO)

Description

The Computer and Information Systems program is designed around a core curriculum and three distinct options. The program's core provides an introduction to computer concepts, software applications, operating systems, networking, database, computer servicing, internet, math, human relations, and writing. Graduates work in information technology for a wide variety of commercial businesses, education, federal/state/local governments, e-commerce, publishing, and real estate. Careers typically include positions such as personal computer technician, desktop support, network administrator, web developer, draftsman, database administrator, system administrator, and related managerial and administrative roles.

The Networking and Cybersecurity option prepares students for entry-level positions in network administration and network security. Students who have completed the option will have the ability to design, create, manage, secure, and maintain computer networks for small businesses. Courses cover both hardware and software and closely follow major industry certification requirements.

Program Learning Outcomes

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

1. Demonstrate the ability to plan, execute, and manage the most current version of both the Windows Server and Windows client operating systems for small to mid-sized businesses.
2. Develop Cisco solutions for use in routing, analyzing, and securing data over local, wide, and wireless networks.
3. Demonstrate currency in information technology knowledge and skills through continuous education and research.
4. Apply best practices in the acquisition and use of hardware and software for targeted scenarios.
5. Implement and secure small to medium-sized networks.

Entrance Requirements

Academic Entrance Requirements

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
- Basic computer competency or CIS 010 Computer Keyboarding and CIS 070 Introduction to Computers: Windows

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

Material Costs

Recommended:

- 16 to 64 GB portable storage (USB drive or SSD drive): \$20 to \$100
- A desktop or laptop computer capable of running the latest version of Windows operating system and the latest version of Microsoft Office: approximately \$800
- Reliable high-speed internet access

Course Requirements

| Course | Title | Credits |
|--|---|--------------|
| Core Courses | | |
| CIS 101 | Information Technology Orientation | 3 |
| CIS 122 | Introduction to Programming | 4 |
| CIS 124 | IT Fundamentals | 4 |
| CIS 131 | Software Applications | 4 |
| CIS 135DB | Database Theory/SQL | 4 |
| CIS 140 | A+ Essentials I | 4 |
| CIS 145 | A+ Essentials II | 4 |
| CIS 178 | Internet in Depth | 4 |
| or CIS 179CL | Cloud Essentials | |
| CIS 179 | Networking Essentials | 4 |
| CIS 195 | Web Development I | 4 |
| CIS 244 | Information Systems Analysis | 4 |
| CIS 279WC | Windows Client | 4 |
| or CIS 179L | Linux Essentials | |
| CIS 297 | CIS Professional Capstone | 4 |
| Networking Option | | |
| Choose a minimum of 27 credits from the following: | | 27 |
| CIS 151C | Cisco Internetworking | |
| CIS 152C | Cisco Router Configuration | |
| CIS 279SC | Windows Server Configuration | |
| CIS 279L | Linux+ | |
| CIS 279SE | Security+ | |
| CIS 284EH | Ethical Hacking | |
| CIS 279OP | Cybersecurity Operations | |
| CIS 280 | Co-op Work Experience CIS | |
| Other Required Courses | | |
| BA 214 | Business Communications | 3-4 |
| or WR 227 | Technical Writing | |
| COMM 111 | Fundamentals of Public Speaking | 3-4 |
| or COMM 218 | Interpersonal Communication | |
| or COMM 219 | Small Group Communication | |
| Human Relations: | | 3-4 |
| MTH 102 | Applied Technical Mathematics (or choose one course from the foundational requirements math list) | 4 |
| WR 121 | Academic Composition | 4 |
| Total Credits | | 95-98 |

Advising Notes

Core courses are all offered two to three quarters each academic year. All option courses are offered one to two quarters an academic year. Planning ahead is important. Students may take non-program support courses any term to build skills related to prerequisites.

This degree is designed for students planning to enter their chosen career upon graduation. Often only selected credits are considered transferable to public or private baccalaureate institutions.

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.
- Additional Requirements:
 - All COCC students enrolled in the Computer Information Systems program (which includes requirements for Cooperative Work Experience) may have to pass Criminal History Checks (CHC) as a condition of their acceptance into a work site. Students who do not pass the CHC may not be eligible to complete requirements at affiliated practicum sites or be hired for some professional positions. Students who believe their history may interfere with their ability to complete the program of study should contact the program director.

Fourth Term

| | | |
|--------------------------|---------------------------------------|-----------|
| CIS 135DB | Database Theory/SQL | 4 |
| CIS 151C | Cisco Internetworking | 4 |
| CIS 195 | Web Development I | 4 |
| CIS 279WC or CIS 179L | Windows Client or Linux Essentials | 4 |
| Credits | | 16 |

Fifth Term

| | | |
|----------------|------------------------------|-----------|
| CIS 152C | Cisco Router Configuration | 4 |
| CIS 244 | Information Systems Analysis | 4 |
| CIS 279L | Linux+ | 4 |
| CIS 279SC | Windows Server Configuration | 4 |
| Credits | | 16 |

Sixth Term

| | | |
|----------------------|---------------------------|--------------|
| CIS 297 | CIS Professional Capstone | 4 |
| CIS 2790P | Cybersecurity Operations | 4 |
| CIS 279SE | Security+ | 4 |
| CIS 284EH | Ethical Hacking | 4 |
| Credits | | 16 |
| Total Credits | | 96-99 |

Sample Plan

| First Term | | Credits |
|--|---|--------------|
| CIS 101 | Information Technology Orientation | 3 |
| CIS 124 | IT Fundamentals | 4 |
| MTH 102 | Applied Technical Mathematics (or choose one course from the foundational requirements math list) | 4 |
| WR 121 | Academic Composition | 4 |
| Credits | | 15 |
| Second Term | | Credits |
| BA 214 or WR 227 | Business Communications or Technical Writing | 3-4 |
| CIS 140 | A+ Essentials I | 4 |
| CIS 145 | A+ Essentials II | 4 |
| CIS 178 or CIS 179CL | Internet in Depth or Cloud Essentials | 4 |
| Credits | | 15-16 |
| Third Term | | Credits |
| CIS 122 | Introduction to Programming | 4 |
| CIS 131 | Software Applications | 4 |
| CIS 179 | Networking Essentials | 4 |
| COMM 111 or COMM 218 or COMM 219 | Fundamentals of Public Speaking or Interpersonal Communication or Small Group Communication | 3-4 |
| <u>Human Relations:</u> | | 3-4 |
| Credits | | 18-20 |