

COMPUTER NETWORKING TECHNOLOGY, Associate in Applied Science Degree - 4590

Engineering, Trades & Computer Technologies Department

The Computer Networking AAS program prepares students for employment in the field of information technology in roles such as network technician, network administrator, systems administrator and customer support. They are trained to design, install, configure, troubleshoot and maintain networks. The program includes the study of data communications, telecommunications, Windows and Linux Server administration, information security fundamentals, PC repair, TCP/IP, cabling, terminations, network connections, cable testers, network analyzers, NIC's, hubs, bridges, switches, and routers. Elective courses allow the students to learn specialized topics such as Cisco Routing and Switching, Voice over IP (VoIP), Wireless Networking Administration and Virtualization and Cloud Computing. Coursework in oral and written communication skills is also included in order to provide these essential skills to needed to excel in today's workplace environment. The program is vendor neutral and coordinates with national standards from the Computing Technology Industry Association (CompTIA). Students may complete this program at the Harrisburg Campus by taking some courses through virtual learning.

Career Opportunities

Computer networking encompasses a broad range of jobs and job titles for CNT graduates including network support technicians, network administrators, network planning analysts, systems analysts, network coordinators, telecommunications specialists, information technology specialists, consultants, market representatives, and related information technologist positions.

Competency Profile

This curriculum is designed to prepare students to:

- List and describe TCP/IP layers, layer interactions, protocols, and applications
- Install, connect, and configure network hardware and software to meet common requirements
- Design and implement an internetwork including IP addressing, subnetting, routing, switching, Virtual Local Area Networks (VLANs), and network design documentation
- Describe the technologies associated with network communications including signaling, noise, error detection and correction, flow control techniques, data compression, and encoding technology
- Describe technical aspects of Ethernet operation including access technologies, bandwidths, standards, VLANs, and electronic connecting devices
- List and describe common Wide Area Network (WAN) technologies, topologies, and associated protocols and devices
- Demonstrate proper troubleshooting methods while implementing networks
- Design, install, test, troubleshoot, and certify communications wiring systems
- Install, test, and troubleshoot PC hardware and windows desktop operating systems
- Demonstrate professional interaction with end users in a technical support environment utilizing troubleshooting, escalation channels, help desk software, and communications skills
- Install, maintain, administer, and support Linux server operating systems
- Install, maintain, administer, and support Windows server operating systems including Active Directory
- List and describe common legal, ethical, and business requirements for securing information
- Utilize security tools and common best practices to design a secure network architecture

PROGRAM REQUIREMENTS (TOTAL CREDITS = 60)

General Education		Major Requirements		Other Required Courses	
ENGL 101 English Composition I (or)	3	CIS 222 Introduction to Windows Servers	3	Program Specific Electives***	9
ENGL 110 Foundations of Professional Writing	(3)	CIS 227 Technical Support	3		
COMM 101 Effective Speaking (or)	3	CIS 264 Fundamentals of Linux Administration	3		
COMM 203 Interpersonal Communication	(3)	CISE 200 Information Security Fundamentals	3		
Humanities & Arts Elective*	3	CNT 120 Network Communication Technology I	3		
Mathematics or Science Elective**	3	CNT 125 Network Communication Technology II	4		
Social & Behavioral Science Elective	3	CNT 140 The Physical Network	3		
First-Year Seminar Elective	1	CNT 220 Internetworking	5		
Wellness	1	ELEC 125 Introduction to PC Technology	3		
	17	ELEC 126 Installing & Troubleshooting PCs	4		

*Students are to select from the following courses: ART 181 or 182; ENGL 206; HUM 101, 115 or 201; MUS 104; PHIL 200; THTR 101; or a foreign language course.

**Students are to select one MATH course from the list of approved Mathematic Core Knowledge Area electives to fulfill this requirement.

*** Select program specific electives from the following: CIS 223; CISE 211; CNT 240, 250, 260, 291, or any CNT200-level course.

Note: Grades of C or higher are required for all computer-related courses (CIS, CISE, CNT, and ELEC)

RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part time students can complete this program by taking one or more courses each semester.

Fall Semester I		Spring Semester I		Fall Semester II		Spring Semester II	
CNT 120	3	CNT 125	4	CIS 222	3	CIS 227	3
COMM 101 or 203	3	CNT 140	3	CIS 264	3	CISE 200	3
ELEC 125	3	ELEC 126	4	CNT 220	5	Mathematics or Science Elective**	3
ENGL 101 or 110	3	Social/Behavioral Science Elective	3	Program Elective***	3	Program Electives***	6
Humanities/Arts Elective*	3			Wellness	1		
FYS Elective	1						