Clemson University
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Education & Training Plan
Network Technician (CompTIA Network+) Certification Program with Externship

Student Full Name: _____

Start Date: _____ End Date: _____

Program includes National Certification & an Externship Opportunity
Mentor Supported

Clemson University Program with Externship

Course Code:	CLEM-IT-NTN
Program Duration:	6 Months
Course Contact Hours:	375
Student Tuition:	$3,999.00

Network Technician (CompTIA Network+)

The Network Technician (CompTIA Network+) program is designed to prepare students to function as computer professionals in multiple technical, business, and healthcare settings. Net+ technicians serve many technical support and IT operation roles with job titles such Network Administrator, Network Field Technician, IS Consultant, Help Desk Technician, Network Support Specialist, and Network Analyst. Earning CompTIA Network+ Certification means that the individual possess the knowledge and skills necessary to be a successful network professional offering a nationally-recognized and industry-recognized credential for experienced network technicians. Indeed, the most widely known technology companies recommend or require CompTIA Network+ Certification for their networking technicians.

Network Technician (CompTIA Network+) Program

The CompTIA Network+ course provides students with the basic knowledge and skills necessary to become an IT network technician. This course is designed to fully prepare students to sit for and pass the CompTIA Network+ Certification exam. Students will gain the knowledge and skills necessary to manage, maintain, troubleshoot, install, operate, and configure basic network infrastructure as well as describe networking technologies, understand basic design principles,

adhere to wiring standards, and use testing tools. Additional job roles for prospective candidates include network technician, network installer, network administrator, help desk technician and IT cable installer.

Education and National Certifications

- Students should have or be pursuing a high school diploma or GED.
- Students who complete this program can sit for the following exam:
  - **CompTIA Network+ Certification Exam (Exam N10-007)**

Program Objectives

- Design and implement functional networks
- Configure, manage, and maintain essential network devices
- Use devices such as switches and routers to segment network traffic and create resilient networks
- Identify benefits and drawbacks of existing network configurations
- Implement network security, standards, and protocols
- Troubleshoot network problems
- Support the creation of virtualized networks
- Communicating effectively and professionally with clients, colleagues, subordinates, and supervisors to achieve the organization's goals involving computer support and IT operations

National Certification

Students who complete the Clemson University Network Technician (CompTIA Network+) program will be prepared to sit for the CompTIA Network+ (N10-007) Certification national certification exam(s). In order to work as a Network Technician (CompTIA Network+), many states nationwide are requiring that learners achieve national certification prior to working in that state. Students who complete this program are encouraged to complete the practical/clinical externship option with their program. This comprehensive program is designed to prepare students to sit for CompTIA Network+ (N10-007) Certification exam(s). Students who complete this program can and do sit for the CompTIA Network+ (N10-007) Certification national certification exam(s) and are qualified, eligible and prepared to do so.

Externship / Hands on Training / Practicum

Although not a requirement, once students complete the program, they have the ability to participate in an externship and/or hands on practicum so as to practice the skills necessary to perform the job requirements of a professional in this field. Students will be assisted with completing a resume and/or other requirements necessary to work in this field. All students who complete this program are eligible to participate in an externship and will be placed with a participating organization near their location. The institution works with national organizations and has the ability to place students in externship opportunities nationwide.

Clemson University contact: If students have any questions regarding this program including national certification and externships **, they should call Salley Ouellette of Clemson University at | (864) 656-2200 or via email at palmer4@clemson.edu**

Note : No refunds can be issued after the start date published in your Financial Award document.

About Clemson University!

Clemson Online, a unit reporting directly to the Provost, works closely with leadership teams across the University to develop, market, and deliver top-quality courses and programs in blended and online formats. The office provides vision, leadership, coordination, and expertise in support of faculty design, delivery, and evaluation of technology-enhanced, blended, and fully online courses and instructional materials. Dynamic, transformative, and unique eLearning opportunities characterize Clemson's approach to online teaching and learning.

Our Mission: Clemson Online provides strategic leadership for online education, emphasizing innovative teaching and superior learning outcomes to maximize student success in 21st-century academic and professional contexts.

Our Vision: Clemson Online will define the public web-grant university through measurable achievements in online education, research, and service. The office is committed to pursuing strategic opportunities, providing supportive resources, promoting superior educational quality, and ensuring faculty involvement and responsibility in shaping Clemson's online future.

Clemson University and Pearson Education

Clemson University's eLearning programs were developed in partnership with Pearson Education to produce the highest quality, best-in-class content and delivery necessary to enhance the overall student learning experience, boost understanding and ensure retention. Pearson Education is the premier content and learning company in North America offering solutions to the higher education and career training divisions of colleges and universities across the country aimed at driving quality education programs to ensure student success. Please visit us at **www.pearson.com** .

About Pearson Education

Welcome to Pearson. We have a simple mission: to help people make more of their lives through learning. We are the world's leading learning company, with 40,000 employees in more than 80 countries helping people of all ages to make measurable progress in their lives. We provide a range of education products and services to institutions, governments and direct to individual learners, that help people everywhere aim higher and fulfil their true potential. Our commitment to them requires a holistic approach to education. It begins by using research to understand what sort of learning works best, it continues by bringing together people and organizations to develop ideas, and it comes back round by measuring the outcomes of our products.

Network Technician (CompTIA Network+) Program Detailed Student Objectives:

TOPOLOGIES, THE OSI MODEL, AND ETHERNET

- Explain devices, applications, protocols, and services at their appropriate OSI layers
- Explain the concepts and characteristics of routing and switching
- Compare and contrast the characteristics of network topologies, types, and technologies
- Deploy the appropriate cabling solution

HUBS, BRIDGES, AND SWITCHES

- Explain the concepts and characteristics of routing and switching
- Given a scenario, determine the appropriate placement of networking devices on a network and install/configure them
- Explain common mitigation techniques and their purposes

INFRASTRUCTURE AND DESIGN, POLICIES AND BEST PRACTICES

- Explain the concepts and characteristics of routing and switching
- Compare and contrast the characteristics of network topologies, types, and technologies
- Identify policies and best practices

INTERNET PROTOCOL AND IP ADDRESSING

- Explain the purposes and uses of ports and protocols
- Configure the appropriate IP addressing components
- Explain the concepts and characteristics of routing and switching

DHCP AND APIPA

- Explain the purposes and uses of ports and protocols
- Given a scenario, configure the appropriate IP addressing components
- Explain the functions of network services

ROUTING

- Explain the concepts and characteristics of routing and switching
- Configure the appropriate IP addressing components
- Determine the appropriate placement of networking devices on a network and install/configure them

TCP AND UDP

- Explain the purposes and uses of ports and protocols
- Explain common scanning, monitoring, and patching processes and summarize their expected outputs

NAME RESOLUTION

- Explain the purposes and uses of ports and protocols
- Explain the functions of network services

MONITORING, SCANNING, AND NETWORK TROUBLESHOOTING

- Explain the purposes and uses of ports and protocols
- Explain common scanning, monitoring, and patching processes and summarize their expected outputs
- Implement network device hardening
- Explain the network troubleshooting methodology
- Troubleshoot common wired connectivity and performance issues
- Troubleshoot common network service issues

APPLICATIONS AND SERVICES, VIRTUALIZATION, SAN, AND CLOUD SERVICES

- Explain the purposes and uses of ports and protocols
- Explain the concepts and characteristics of routing and switching
- Explain the functions of network services
- Determine the appropriate placement of networking devices on a network and install/configure them
- Explain the purposes and use cases for advanced networking devices
- Troubleshoot common wired connectivity and performance issues
- Troubleshoot common network service issues
- Summarize cloud concepts and their purposes
- Explain the purposes of virtualization and network storage technologies

NETWORK SECURITY DESIGN AND APPLIANCES

- Implement network device hardening
- Explain common mitigation techniques and their purposes
- Troubleshoot common wired connectivity and performance Issues
- Explain the purposes and use cases for advanced networking devices
- Summarize common network attacks
- Troubleshoot common network service issues

AUTHENTICATION, ENDPOINT SECURITY, AND NETWORK SITE MANAGEMENT

- Explain the purposes and uses of ports and protocols
- Explain the purposes and use cases for advanced networking devices
- Explain authentication and access controls
- Summarize common networking attacks
- Explain common mitigation techniques and their purposes
- Deploy the appropriate cabling solution
- Use appropriate documentation and diagrams to manage the network
- Compare and contrast business continuity and disaster recovery concepts
- Summarize the purposes of physical security devices

INSTALLING CABLED NETWORKS

- Given a scenario, deploy the appropriate cabling solution
- Given a scenario, determine the appropriate placement of networking devices on a network and install/configure them
- Troubleshoot common wired connectivity and performance issues

INSTALLING WIRELESS NETWORKS

- Compare and contrast the characteristics of network topologies, types, and technologies
- Given a scenario, implement the appropriate wireless technologies and configurations
- Given a scenario, determine the appropriate placement of networking devices on a network and install/configure them
- Explain the purposes and use cases for advanced networking devices
- Given a scenario, secure a basic wireless network
- Summarize common networking attacks
- Troubleshoot common wireless connectivity and performance issues

INSTALLING WAN LINKS

- Explain the concepts and characteristics of routing and switching
- Compare and contrast the characteristics of network topologies, types, and technologies
- Implement the appropriate wireless technologies and configurations
- Determine the appropriate placement of networking devices on a network and install/configure them
- Compare and contrast WAN technologies

CONFIGURING REMOTE ACCESS

- Explain the purposes and uses of ports and protocols
- Explain the purposes and use cases for advanced networking devices
- Compare and contrast WAN technologies

Note: This program can be completed in 6 months. However, students will have online access to this program for a 24-month period.

MICROSOFT OFFICE

- Module Use an integrated software package, specifically the applications included in the Microsoft Office suite
- Demonstrate marketable skills for enhanced employment opportunities
- Describe proper computer techniques for designing and producing various types of documents
- Demonstrate the common commands & techniques used in Windows desktop
- List the meaning of basic PC acronyms like MHz, MB, KB, HD and RAM
- Use WordPad and MSWord to create various types of documents
- Create headings and titles with Word Art
- Create and format spreadsheets, including the use of mathematical formulas
- Demonstrate a working knowledge of computer database functions, including putting, processing, querying and outputting data
- Define computer terminology in definition matching quizzes
- Use the Windows Paint program to alter graphics
- Use a presentation application to create a presentation with both text and graphics
- Copy data from one MS Office application to another application in the suite
- Use e-mail and the Internet to send Word and Excel file attachments
- Demonstrate how to use the Windows Taskbar and Windows Tooltips
- Explain how copyright laws pertain to data and graphics posted on the Internet
- Take the college computer competency test after course completion
- Follow oral and written directions and complete assignments when working under time limitations

Note: Although the Microsoft Office Module is not required to successfully complete this program, students interested in pursuing free Microsoft MOS certification may want to consider completing this Microsoft Office Module at no additional cost.

System Requirements:

Windows Users:

- Windows 8, 7, XP or Vista
- 56K modem or higher
- Soundcard & Speakers
- Firefox, Chrome or Microsoft Internet Explorer

Mac OS User:

- Mac OS X or higher (in classic mode)
- 56K modem or higher
- Soundcard & Speakers
- Apple Safari

iPad Users:

- Due to Flash limitations, eLearning programs are NOT compatible with iPads

Screen Resolution:

- We recommend setting your screen resolution to 1024 x 768 pixels.

Browser Requirements:

- System will support the two latest releases of each browser. When using older versions of a browser, users risk running into problems with the course software.
- Windows Users: Mozilla Firefox, Google Chrome, Microsoft Internet Explorer
- Mac OS Users: Safari, Google Chrome, Mozilla Firefox

Suggested Plug-ins:

- Flash Player
- Real Player
- Adobe Reader
- Java