**Program Planning Guide**  
*Networking Technology, Diploma (D25340)*

Program Length: 3 Semesters  
Career Pathway Options: Associate in Applied Science Degree in Network Technology.  
Program Sites: North Carolina School of Telecommunications - Day and selected evening courses  
Corporate and career-centered programs.

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<tr>
<th><strong>Suggested Course Schedule:</strong></th>
<th><strong>HOURS</strong></th>
<th><strong>Grade</strong></th>
<th><strong>Semester</strong></th>
<th><strong>Notes</strong></th>
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<td><strong>Class</strong></td>
<td><strong>Lab</strong></td>
<td><strong>Credit</strong></td>
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<td>1st Semester</td>
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<td>ACA 111 College Student Success</td>
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<td>CIS 110 Introduction to Computers</td>
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<td>CTS 120 Hardware/Software Support</td>
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<td>NET 125 Networking Basics</td>
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<td>NET 126 Routing Basics</td>
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<td>NOS 110 Operating Systems Concepts</td>
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<td>NOS 130 Windows Single User (MCP)</td>
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<td>2nd Semester</td>
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<td>NET 225 Routing &amp; Switching I</td>
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<td>NET 226 Routing &amp; Switching II</td>
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<td>NOS 120 Linux/UNIX Single User (Linux +)</td>
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<td>NOS 220 Linux/UNIX Administration I</td>
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<td>NOS 230 Windows Admin I</td>
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<td>SEC 110 Security Concepts</td>
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<td>3rd Semester</td>
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<td>ENG 111 Writing &amp; Inquiry</td>
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<td>MAT 143 Quantitative Literacy</td>
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Total Semester Hours Credit: 43

**Course Descriptions:**

- **ACA 111 College Student Success**  
  1-0-1  
  This course introduces the college’s physical, academic, and social environment and promotes the personal development essential for success. Topics include campus facilities and resources; policies, procedures, and programs; study skills; and life management issues such as health, self-esteem, motivation, goal-setting, diversity, and communication. Upon completion, students should be able to function effectively within the college environment to meet their educational objectives.

- **CIS 110 Introduction to Computers**  
  2-2-3  
  This course introduces computer concepts, including fundamental functions and operations of the computer. Topics include identification of hardware components, basic computer operations, security issues, and use of software applications. Upon completion, students should be able to demonstrate an understanding of the role and function of computers and use the computer to solve problems. This course has been approved for transfer under the CAA and ICAA as a premajor and/or elective course requirement.

- **CTS 120 Hardware/Software Support**  
  2-3-3  
  **Prerequisite:** CIS 110 or CIS 111  
  This course covers the basic hardware of a personal computer, including installation, operations and interactions with software. Topics include component identification, memory-system, peripheral installation and configuration, preventive maintenance, hardware diagnostics/repair, installation and optimization of system software, commercial programs, system configuration, and device-drivers. Upon completion, students should be able to select appropriate computer equipment and software, upgrade/maintain existing equipment and software, and troubleshoot/repair non-functioning personal computers.
ENG 111  Writing & Inquiry  3-0-3
Prerequisites: Take one set: RED 090 and ENG 090, ENG 095, DRE 098, or appropriate placement test scores.
This course is designed to develop the ability to produce clear writing in a variety of genres and formats using a recursive process. Emphasis includes inquiry, analysis, effective use of rhetorical strategies, thesis development, audience awareness, and revision. Upon completion, students should be able to produce unified, coherent, well-developed essays using standard written English. This course has been approved for transfer under the CAA and ICAA as a general education course in English Composition.

MAT 143  Quantitative Literacy  2-2-3
DMA 040, DMA 050, and DRE-098  Set 2: DMA 010, DMA 020, DMA 030, DMA 040, DMA 050, and ENG-095  Set 3: DMA 010, DMA 020, DMA 030, DMA 040, DMA 050, and ENG-090
This course is designed to engage students in complex and realistic situations involving the mathematical phenomena of quantity, change and relationship, and uncertainty through project- and activity-based assessment. Emphasis is placed on authentic contexts which will introduce the concepts of numeracy, proportional reasoning, dimensional analysis, rates of growth, personal finance, consumer statistics, practical probabilities, and mathematics for citizenship. Upon completion, students should be able to utilize quantitative information as consumers and to make personal, professional, and civic decisions by decoding, interpreting, using, and communicating quantitative information found in modern media and encountered in everyday life. This course has been approved for transfer under the CAA and ICAA as a general education course in Mathematics (Quantitative).

NET 125  Networking Basics  1-4-3
Prerequisite: NET 125
This course introduces the networking field. Emphasis is placed on network terminology and protocols, local-area networks, wide-area networks, OSI model, cabling, router programming, Ethernet, IP addressing, and network standards. Upon completion, students should be able to perform tasks related to networking mathematics, terminology, and models, media, Ethernet, subnetting, and TCP/IP Protocols.

NET 126  Routing Basics  1-4-3
Prerequisite: NET 125
This course focuses on initial router configuration, router software management, routing protocol configuration, TCP/IP, and access control lists (ACLs). Emphasis will be placed on the fundamentals of router configuration, managing router software, routing protocol, and access lists. Upon completion, students should have an understanding of routers and their role in WANs, router configuration, routing protocols, TCP/IP, troubleshooting, and ACLs.

NET 225  Routing and Switching I  1-4-3
Prerequisite: NET 126
This course focuses on advanced IP addressing techniques, intermediate routing protocols, command-line interface configuration of switches, Ethernet switching, VLANs, STP, and VTP. Emphasis will be placed on application and demonstration of skills acquired in prerequisite courses. Upon completion, students should be able to perform tasks related to VLSM, routing protocols, switching concepts and configuration, STP, VLANs, and VTP.

NET 226  Routing and Switching II  1-4-3
Prerequisite: NET 225
This course introduces WAN theory and design, WAN technology, PPP, Frame Relay, ISDN, and additional case studies. Topics include network congestion problems, TCP/IP transport and network layer protocols, advanced routing and switching configuration, ISDN protocols, PPP encapsulation operations on a router. Upon completion, students should be able to provide solutions for network routing problems, identify ISDN protocols, and describe the Spanning Tree protocol.

NOS 110  Operating System Concepts  2-3-3
Prerequisite: NOS 110 or CET 211
This course introduces operating system concepts, including installation and maintenance. Emphasis is placed on operating system concepts, management, maintenance, and resources required. Upon completion of this course, students will have an understanding of OS concepts, installation, management, maintenance, using a variety of operating systems.

NOS 120  Linux/UNIX Single User  2-2-3
Prerequisite: NOS 110 or CET 211
This course introduces the Linux file system and access permissions, GNOME Interface, VI editor, X Window System expression pattern matching, I/O redirection, network and printing utilities. Upon completion, students should be able to customize and use Linux systems for command line requirements and desktop productivity roles.

NOS 130  Windows Single User  2-2-3
Prerequisite: NOS 110 or CET 211
This course introduces operating system concepts for single-user systems. Topics include hardware management, file and memory management, system configuration/optimization, and utilities. Upon completion, students should be able to perform operating systems functions at the support level in a single-user environment.

NOS 220  Linux/UNIX Administration I  2-2-3
Prerequisite: NOS 120
This course introduces the Linux file system, group administration, and system hardware controls. Topics include installation, creation and maintaining file systems, NIS client and DHCP client configuration, NFS, SMB/Samba, Configure X, Gnome, KDE, basic memory, processes, and security. Upon completion, students should be able to perform system administration tasks including installation, configuring, and attaching a new Linux workstation to an existing network.
Networking Technology, Diploma (D25340)

NOS 230    Windows Admin I    2-2-3
Prerequisite: NOS 130
This course covers the installation and administration of a
Windows Server network operating system. Topics include
managing and maintaining physical and logical devices, access to
resources, the server environment, managing users, computers,
and groups, and Managing/Implementing Disaster Recovery.
Upon completion, students should be able to manage and
maintain a Windows Server environment.

SEC 110    Security Concepts    3-0-3
This course introduces the concepts and issues related to securing
information systems and the development of policies to
implement information security controls. Topics include the
historical view of networking and security, security issues, trends,
security resources, and the role of policy, people, and processes in
information security. Upon completion, students should be able
to identify information security risks, create an information
security policy, and identify processes to implement and enforce
policy.