**Program Planning Guide**  
**Network Security Certificate (C25340SE)**

Program Length: 2 semesters  
Career Pathway Options: Associate in Applied Science Degree in Networking Technology.  
Program Sites: North Carolina School of Telecommunications - Day and selected evening courses. Corporate and career-centered programs

<table>
<thead>
<tr>
<th>Course Requirements</th>
<th>HOURS</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class</td>
<td>Lab</td>
<td>Credit</td>
</tr>
<tr>
<td>NET 125 Networking Basics</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>NET 126 Routing Basics</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>NET 225 Routing &amp; Switching I</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>NET 226 Routing &amp; Switching II</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>SEC 110 Security Concepts</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>SEC 160 Security Fundamentals I</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

Total Semester Hours Credit: 18

**Course Descriptions:**

**NET 125 Networking Basics 1-4-3**  
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.

**SEC 110 Security Concepts 2-2-3**  
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.

**SEC 160 Security Administration I 2-2-3**  
*Prerequisites: Take One Set: Set 1: SEC 110 and NET 110; Set 2: SEC 110 and NET 125*  
This course provides an overview of security administration and fundamentals of designing security architectures. Topics include networking technologies, TCP/IP concepts, protocols, network traffic analysis, monitoring, and security best practices. Upon completion, students should be able to identify normal network traffic using network analysis tools and design basic security defenses.

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