



Network Technology
Credential: Diploma in Networking Technology
D25340

The Network Technology Program prepares individuals for employment supporting network infrastructure and environments. Students will learn how to use technologies to provide reliable transmission and delivery of data, voice, image, and video communication in business, industry, and education.

Course work includes design, installation, configuration, and management of network infrastructure technologies and network operating systems. Emphasis is placed on the implementation and management of network software and the implementation and management of hardware, such as switches and routers.

Graduates should find employment in entry-level jobs as local area network managers, network operators, network analysts, and network technicians. Graduates may also be qualified to take certification examinations for various network industry certifications, depending on their local program.

Program Length: 4 Semesters
 Career Pathway Options: Associate in Applied Science Degree in Network Technology.
 Program Sites: Program Sites: North Carolina School of Telecommunications – Corporate and “Career Centered” Day Program and Selected Evening Courses

Course Requirements for Network Technology Diploma

A. General Education Courses (7 SHC)		C-L-SHC
ENG 111	Expository Writing	3-0-3
ENG 111A	Expository Writing Lab	0-2-1
*MAT 140	Survey of Mathematics	3-0-3
B. Required Major Core Courses (33 SHC)		
CIS 115	Introduction to Programming and Logic	2-2-3
CTS 120	Hardware/Software Support	2-3-3
DBA 110	Database Concepts	2-2-3
NET 125	Routing and Switching I	1-4-3
NET 126	Routing and Switching II	1-4-3
NOS 110	Operating Systems Concepts	2-2-3
NOS 120	Linux/UNIX Single User	2-2-3
NOS 130	Windows Single User	2-2-3
SEC 110	Security Concepts	3-0-3
C. Required Subject Areas		
Basic Computer Skills:		
CIS 110	Introduction to Computers	2-2-3

Business (select one course):		
BUS 110	Introduction to Business	3-0-3
CTS 115	Information Systems Business Concepts	3-0-3

Total Semester Hours Required for Graduation: 40

Semester Curriculum for Diploma in Networking Technology

1 st Semester (15 SHC)		C-L-SHC
CIS 110	Computer Concepts	2-2-3
NET 125	Networking Basics	1-4-3
NET 126	Routing Basics	1-4-3
NOS 110	Operating Systems Concepts	2-2-3
SEC 110	Security Concepts	<u>3-0-3</u>
		9-13-15
2 nd Semester (9 SHC)		
CTS 120	Hardware/Software Support	2-3-3
NOS 120	Linux/UNIX Single User	2-2-3
NOS 130	Windows Single User	<u>2-2-3</u>
		6-7-9
3 rd Semester (7SHC)		
ENG 111	Expository Writing	3-0-3
ENG 111A	Expository Writing Lab	0-2-1
*MAT 140	Survey of Mathematics	<u>3-0-3</u>
		6-2-7
4 th Semester (9SHC)		
BUS 110	Introduction to Business	3-0-3
		OR
CTS 115	Information Systems Business Concepts	3-0-3
CIS 115	Introduction to Programming and Logic	2-3-3
DBA 110	Database Concepts	<u>2-3-3</u>
		7-6-9

*Students may substitute MAT 161

Total Semester Hours Credit: 40

COURSE DESCRIPTIONS

BUS 110	Introduction to Business	3-0-3
This course provides a survey of the business world. Topics include the basic principles and practices of contemporary business. Upon completion, students should be able to demonstrate an understanding of business concepts as a foundation for studying other business subjects. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.		
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 to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics (Quantitative Option). This course is also available through the Virtual Learning Community (VLC).		

CIS 115 Intro to Prog & Logic 2-2-3

Prerequisites: MAT 070, MAT 080, MAT 090, MAT 095, MAT 120, MAT 121, MAT 161, MAT 171, or MAT 175

This course introduces computer programming and problem solving in a structured program logic environment. Topics include language syntax, data types, program organization, problem solving methods, algorithm design, and logic control structures. Upon completion, students should be able to manage files with operating system commands, use top-down algorithm design, and implement algorithmic solutions in a programming language. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics (Quantitative Option). This course is also available through the Virtual Learning Community (VLC).

CTS 115 Info Sys Business Concept 3-0-3

The course introduces the role of IT in managing business processes and the need for business process and IT alignment. Emphasis is placed on industry need for understanding business challenges and developing/managing information systems to contribute to the decision making process based on these challenges. Upon completion, students should be able to demonstrate knowledge of the 'hybrid business manager' and the potential offered by new technology and systems.

CTS 120 Hardware/Software Support 2-3-3

Prerequisites: 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.

DBA 110 Database Concepts 2-3-3

This course introduces database design and creation using a DBMS product. Emphasis is placed on data dictionaries, normalization, data integrity, data modeling, and creation of simple tables, queries, reports, and forms. Upon completion, students should be able to design and implement normalized database structures by creating simple database tables, queries, reports, and forms.

ENG 111 Expository Writing 3-0-3

Prerequisites: 80 CPT reading score and 86 CPT writing score, or 18 ACT score, or 450 verbal SAT score, or satisfactory completion of developmental requirements.

Corequisites: ENG 111A

This course is the required first course in a series of two designed to develop the ability to produce clear expository prose. Emphasis is placed on the writing process including audience analysis, topic selection, thesis support and development, editing, and revision. Upon completion, students should be able to produce unified, coherent, well-developed essays using standard written English. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in English composition.

ENG 111A Expository Writing Lab 0-2-1

Prerequisites: 80 CPT reading and 86 CPT writing score, or 18 ACT score, or 450 verbal SAT score, or satisfactory completion of developmental requirements.

Corequisites: ENG 111

This writing laboratory is designed to apply the skills introduced in ENG 111. Emphasis is placed on the editing and revision components of the writing process. Upon completion, students should be able to apply those skills in the production of final drafts in ENG 111. The computer is used as a writing and design tool for this course.

MAT 140 Survey of Mathematics 3-0-3

Prerequisites: CPT arithmetic score of 57 and algebra score of 38, or ACT score of 18, or SAT mathematics score of 450, or successful completion of developmental requirements

This course provides an introduction in a non-technical setting to selected topics in mathematics. Topics may include, but are not limited to, sets, logic, probability, statistics, matrices, mathematical systems, geometry, topology, mathematics of finance, and modeling. Upon completion, students should be able to understand a variety of mathematical applications, think logically, and be able to work collaboratively and independently. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences/mathematics.

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

Prerequisites: 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.

NOS 110 Operating System Concepts 2-3-3

This course introduces students to a broad range of 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

Prerequisites: NOS 110

This course develops the necessary skills for students to develop both GUI and command line skills for using and customizing a Linux workstation. Topics include 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

Prerequisites: NOS 110

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.

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.