CENTRAL CAROLINA COMMUNITY COLLEGE

Program Planning Guide
Information Technology: Network Management, Diploma (D25590)

Program Length: 4 Semesters (Night Schedule for NET Courses Required)
Career Pathway Options: Diploma in Information Technology Network Management; Specialized Networking Certificate Programs
Program Site(s): Lee Main Campus, Day and Selected Evening Courses

Suggested Course Schedule:		Hours				Notes:
		Class	Lab	Clinical	Credit	
1st Semester (Fall)						
ACA 122	Student Success Course				1	
CTI 110	Web, Pgm, & Db Foundation	2	2	0	3	
CTI 120	Network and Sec Foundation	2	2	0	3	
CTS 120	Hardware/Software Support	2	3	0	3	
CTS 115	Information Systems Business Concept	3	0	0	3	
NOS 130	Windows Single User	2	2	0	3	
					16	
2nd Semester (Spring)						
NET 125	Networking Basics	1	4	0	3	
NOS 120	Linux/UNIX Single User	2	2	0	3	
NOS 230	Windows Administration I	2	2	0	3	
Mathematics - select one:						
MAT 143	Quantitative Literacy	2	2	0	3	
MAT-171	Precalclus Algebra	3	2	0	4	
					12	or 13
3rd Semester (Summer)						
NET 126	Routing Basics	1	4	0	3	
ENG 111	Writing and Inquiry	3	0	0	3	
					6	
4th Semester (Fall)						
NOS 220	Linux/UNIX Administration I	2	2	0	3	
NET 225	Routing and Switching I	1	4	0	3	
SEC 160	Security Administration I	2	2	0	3	
					9	

Total Semester Hours Credit Required for Graduation: 43

ACA 122   College Transfer Success   0-2-1

This course provides information and strategies necessary to develop clear academic and professional goals beyond the community college experience. Topics include the CAA, college policies and culture, career exploration, gathering information on senior institutions, strategic planning, critical thinking, and communications skills for a successful academic transition. Upon completion, students should be able to develop an academic plan to transition successfully to senior institutions. This course has been approved for transfer under the CAA and ICAA as a premajor and/or elective course requirement.

CTI 110   Web, Programming, & Database Foundation   2-2-3

This course covers the introduction of the tools and resources available to students in programming, mark-up language and services on the Internet. Topics include standard mark-up language Internet services, creating web pages, using search engines, file transfer programs; and database design and creation with DBMS products. Upon completion students should be able to demonstrate knowledge of programming tools, deploy a web-site with mark-up tools, and create a simple database table.

CTI 120   Network & Sec Foundation   2-2-3

This course introduces students to the Network concepts, including networking terminology and protocols, local and wide area networks, and network standards, Emphasis is placed on securing information systems and the various implementation policies. Upon completion, students should be able to perform basic tasks related to networking mathematics, terminology, media and protocols.

CTS 115   Information Systems 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. 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

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 and Inquiry   3-0-3

Prerequisites: DRE 098 or ENG 002
Local Prerequisites: Take one: 1) ENG 011; 2) ENG 002; 3) DRE 098; 4) ENG 090; 5) ENG 095

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 universal general education transfer component (UGETC) course in English Composition.

MAT 143   Quantitative Literacy   2-2-3

Prerequisite: Take one set: 1) DMA 010, DMA 020, DMA 030, DMA 040, DMA 050, and DRE-098; 2) DMA 025, DMA 040, DMA 050 and DRE 098; 3) DMA 025, DMA 045 and DRE 098; 4) DMA 010, DMA 020, DMA 030, DMA 045 and DRE 098; 5) MAT-003 & ENG-002; 6) MAT-003 & ENG-111; 7) MAT-003 & DRE-098; 8) DMA-010, DMA-020, DMA-030, DMA-040, DMA-050, & ENG-002; 9) DMA-010, DMA-020, DMA-030, DMA-045, & ENG-002; 10) DMA-025, DMA-040, DMA-050, & ENG-002; 11) DMA-025, DMA-045, & ENG-002
Local RISE corequisites: Take one group: 1) MAT-043; 2) MAT-003; 3) DMA-010, DMA-020, DMA-030, DMA-040, DMA-050, DRE-098; 4) DMA-025, DMA-040, DMA-050, DRE-098; 5) DMA-025, DMA-045, DRE-098

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 universal general education transfer component (UGETC) course in Mathematics.

MAT 171   Precalculus Algebra   3-2-4

Prerequisite: Take one set:
1. DMA-010, DMA-020, DMA-030, DMA-040, DMA-050, DMA-060, DMA-070, and DMA-080; 2. DMA-010, DMA-020, DMA-030, DMA-040, DMA-050, and DMA-065; 3. DMA-010, DMA-020, DMA-030, DMA-045, DMA-060, DMA-070, and DMA-080
4. DMA-010, DMA-020, DMA-030, DMA_045, & DMA-065;
5. DMA-025, DMA-040, DMA-050, DMA-060, DMA-070, & DMA-080; 6. DMA-025, DMA-040, DMA-050, & DMA-065;
7. DMA-025, DMA-045, DMA-060, DMA-070, & DMA-080;
8. DMA-025, DMA-045, & DMA-065; 9. MAT-212; 10. MAT-003
Local RISE Corequisites: Take one group: 1. MAT-071; 2. MAT-003; 3. DMA-010, DMA-020, DMA-030, DMA-040, DMA-050, DMA-060, DMA-070, DMA-080; 4. MAT-121; 5. MAT-161;
6. DMA-010, DMA-020, DMA-030, DMA-040, DMA-050, DMA-065;
7. DMA-010, DMA-020, DMA-030, DMA-045, DMA-065;
8. DMA-025, DMA-045, DMA-065; 9. DMA-025, DMA-040, DMA-

050, DMA-060, DMA-070, DMA-080; 10. DMA-025, DMA-045, DMA-060, DMA-070, DMA-080; 11. DMA-010, DMA-020, DMA-030, DMA-045, DMA-060, DMA-070, DMA-080; 12. DMA-025, DMA-040, DMA-050, DMA-065; 13. MAT-060, MAT-080; 14. MAT-060, MAT-090; 15. MAT-095
This course is designed to develop topics which are fundamental to the study of Calculus. Emphasis is placed on solving equations and inequalities, solving systems of equations and inequalities, and analysis of functions (absolute value, radical, polynomial, rational, exponential, and logarithmic) in multiple representations. Upon completion, students should be able to select and use appropriate models and techniques for finding solutions to algebra-related problems with and without technology. This course has been approved for transfer under the CAA and ICAA as a universal general education transfer component (UGETC) course in Mathematics.

NET 125   Introduction to Networks   1-4-3
This course introduces the architecture, structure, functions, components, and models of the Internet and computer networks. Topics include introduction to the principles of IP addressing and fundamentals of Ethernet concepts, media, and operations. Upon completion, students should be able to build simple LANs, perform basic configurations for routers and switches, and implement IP addressing schemes.

NET 126   Routing Basics   1-4-3
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
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.

NOS 120   Linux/UNIX Single User   2-2-3
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
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.

NOS 230   Windows Administration I   2-2-3
This course covers the installation and configuration of a Windows Server operating system. Emphasis is placed on the basic configuration of core network services, Active Directory and group policies. Upon completion, students should be able to install and configure a Windows Server operating system.

SEC 160   Security Administration I   2-2-3
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.