

NETWORK SYSTEMS ADMINISTRATION - AAS DEGREE PROGRAM

Offered at the HSW Campus

Program Description: The College of Health Care Professions (CHCP) offers a Network Systems Administration, Associate of Applied Science Degree Program; that provides students with the knowledge and skills necessary to perform entry-level network administration job functions. Students will gain an understanding of networking technology for local area networks (LANs), wide area networks (WANs), and programming concepts. This program will prepare students for networking and information technology careers in businesses including the health care industry. The curriculum provides exposure to PC and Network troubleshooting, applications, operating systems, as well as network configuration, administration, hardware, maintenance and security with an additional emphasis on health care specific environments topologies and implementations.

Program Requirements: Each participant must possess a high school diploma or GED and be able to read and write English. Students entering into the program must first pass the Scholastic Level Exam with a minimum score of 21. Participants must have good vision, coordination, health, be neat, and professional.

Program Length: The length of time normally required to complete the program is (80) weeks.

Delivery Method: The delivery method for this program is blended. General Education courses will be delivered via online distance education and noted with an (*). The core course will be delivered via both residential and distance education and noted with an (**).

The student will practice what they learn on both real equipment and in virtual environments utilizing Cisco Packet Tracer, a network configuration simulation tool (The Packet Tracer program is very similar to the actual Cisco certification testing environment).

The student will practice with server and desktop hardware as well, learn how to build, manage, and deploy virtual environments using virtualization software.

COURSE CODE	COURSE TITLE	LECTURE HOURS	LAB HOURS	CLINICAL HOURS	TOTAL HOURS	SEMESTER CREDITS
Semester I						
POFT103	Interpersonal and Communication Skills *	48	0	0	48	3.0
IT110	Introduction to Computer Concepts and Applications with lab**	30	30	0	60	3.0
IT120	Introduction to computer hardware with lab**	30	30	0	60	3.0
POFM114	College Mathematics*	48	0	0	48	3.0
Semester I Total		156	60	0	216	12.0
Semester II						
MATH1314	College Algebra*	48	0	0	48	3.0
NET100	Network Essentials with Lab**	30	30	0	60	3.0
IT130	Introduction to COMPUTER SOFTWARE with Lab**	30	30	0	60	3.0
ENGL101	English Composition*	48	0	0	48	3.0
Semester II Total		156	60	0	216	12.0
Semester III						
NET110	Introduction to Networks with Lab**	30	30	0	60	3.0
IT140	Windows Operating System with Lab**	30	30	0	60	3.0
<i>PSYT101</i>	Introduction to Psychology*	48	0	0	48	3.0
SCSC303	Introduction to Sociology*	48	0	0	48	3.0
Semester III Total		156	60	0	216	12.0
Semester IV						
IT150	Introduction to Programming**	30	30	0	60	3.0
IT160	Introduction to Health Care for Information Systems**	30	30	0	60	3.0
IT170	Linux Systems Administration with Lab**	30	30	0	60	3.0
NET120	Routing and Switching with Lab**	30	30	0	60	3.0
Semester IV Total		120	120	0	240	12.0
Semester V						
NET130	LAN Switching with Lab**	30	30	0	60	3.0
NET140	WAN Technologies with Lab**	30	30	0	60	3.0
CERT200	Certification Exam Prep (A+) **	30	30	0	60	3.0
CERT210	Certification Exam Prep (CCENT) **	30	30	0	60	3.0
Semester V Total		120	120	0	240	12.0
I	Program Total	708	420	0	1128	60.0

Total Program 1128 Hours/60.0 Semester Credits

Course Descriptions: Course descriptions include the course number, title, and synopsis, a listing of lecture, laboratory, extemship hours, total clock hours and academic credits. For example, the listing "15/30/0/45/2.0" indicates that the course consists of 15 hours of lecture, 30 hours of laboratory, 0 hours of extemship, 45 total clock hours and 2.0 academic credits.

NOTE: Students must successfully complete all prerequisite courses in sequence before advancing. Other courses may not be offered in the sequence listed below.

POFT103	INTERPERSONAL AND COMMUNICATION SKILLS*	48/0/0/48/3.0
Emphasis on the application of basic psychological principles and the study of behavior as they apply to special populations. Topics include procedures for self-understanding and social adaptability in interpersonal communication with patients, teachers and co-workers in an ambulatory care or hospital setting. Prerequisites: None		
IT110	INTRODUCTION TO COMPUTER CONCEPTS AND APPLICATIONS WITH LAB**	30/30/0/60/3.0
This course will introduce learner to computer basic concepts and applications providing an overview of computer information systems. Learners will explore various topics such as computer hardware components, operating systems software, applications software, computer network basics, the Internet, and e-mail. Learners will also gain hands-on skill with lab exercises on basic computer operating system, basic applications such as Internet and e-mail, word processing, spreadsheet, database management, and presentation applications. Prerequisites: None		
IT120	INTRODUCTION TO COMPUTER HARDWARE WITH LAB**	30/30/0/60/3.0
This course provides the fundamentals of computer hardware, as well advanced concepts topic such as security, networking, and the responsibilities of an IT professional. Learners who complete this course will be able to describe the internal components of a computer, assemble a computer system, install an operating system, and troubleshoot using system tools and diagnostic software. Learners will also be able to connect to the Internet and share resources in a networked environment. Other topics in this course include mobile operating systems, OS X, Linux, and client side virtualization. Expanded topics include Microsoft Windows operating systems, security, networking, and troubleshooting (align to CompTIA A+ courses). <i>Career Services Project</i> . Prerequisites: None		
POFM114	COLLEGE MATHEMATICS*	48/0/0/48/3.0
This course covers basic mathematics including addition, subtraction, multiplication, and division. Also covered is fraction notation and mixed numerals, decimals, ratios, rates and unit prices, proportions, solving various problems using percent equations and proportions, sales tax, commissions and discounts, interest, data. graphs, and statistics, measurements, geometry, real numbers, algebra, and equations. Prerequisites: None		
MATH1314	COLLEGE ALGEBRA*	48/0/0/48/3.0
The students will identify and operate with absolute value equations and inequalities, will acquire graphing skills, inverse functions, logarithmic and exponential functions, polynomial and rational functions, piece-wise defined functions, theory of equations and matrices. Prerequisites: None		
NET100	NETWORK ESSENTIALS WITH LAB**	30/30/0/60/3.0
This course provides a thorough overview of networking basics: MAC and IP addressing, hubs and switches, packets and ports, and OSI versus TCP/IP models. The course also covers the configuration, management, and troubleshooting of common wired and wireless network devices. Also included are emerging technologies such as unified communications, mobile, cloud, and virtualization technologies. Prerequisites: None		
IT130	INTRODUCTION TO COMPUTER SOFTWARE WITH LAB**	30/30/0/60/3.0
This course provides the fundamentals of computer software, as well advanced concepts topic such as security, networking, and the responsibilities of an IT professional. Learners who complete this course will be able to describe the internal components of a computer, assemble a computer system, install an operating system, and troubleshoot using system tools and diagnostic software. Learners will also be able to connect to the Internet and share resources in a networked environment. Other topics in this course include mobile operating systems, OS X, Linux, and client side virtualization. Expanded topics include Microsoft Windows operating systems, security, networking, and troubleshooting (align to CompTIA A+ courses). <i>Career Services Project</i> . Prerequisites: IT120		
ENGL101	ENGLISH COMPOSITION*	48/0/0/48/3.0
This course provides the student with instruction and practice in expository writing and emphasizes grammatical and mechanical accuracy and proper essay form. Emphasis is placed on clarity, logical organization, unity and coherence of central idea and supporting material. Prerequisites: None		

NET110	INTRODUCTION TO NETWORKS WITH LAB**	30/30/0/60/3.0
<p>This networking course introduces the underlying technology of Local Area Networks (LANs), Metropolitan Area Networks (MANs), Wide Area Networks (WANs), and the Internet. Topics include the Open System Interconnection (OSI) and Transmission Control Protocol/Internet Protocol (TCP/IP) models; fiber optic and wireless networking media; an overview of routing and switching; router and switch setup configuration commands; and small network planning and configuration, to include testing and troubleshooting. This course mentor's learner on architecture, structure, functions and components of the Internet and other computer networks. By the end of the course, learners will be able to build simple LANs, perform basic configurations for routers and switches, and implement IP addressing schemes. Prerequisites: NET100</p>		
IT140	WINDOWS OPERATING SYSTEM WITH LAB **	30/30/0/60/3.0
<p>This course centers on the installation and configuration of Windows Server. Learner will explore basic operation and management of local and wide area networks using the Microsoft network operating system. Topics include installation of server software, physical network configuration, network security, policy, domain controllers and performance monitoring and troubleshooting techniques. Network operating system features, ease of management, utilities, upgrades, and interoperability with other network operating systems and client types are analyzed. Microsoft Windows Server 70-410 w/R2. Prerequisites: IT120</p>		
PSYT101	INTRODUCTION TO PSYCHOLOGY*	48/0/0/48/3.0
<p>This course covers the interrelationship between biology and human behavior. Included in the course are theories involved in sensation and perception, consciousness, learning, memory, thought, language, mental abilities, motivation and emotion, effects of stress, personality traits, social psychology, and psychological disorders and their treatments. Prerequisites: None</p>		
SCSC303	INTRODUCTION TO SOCIOLOGY*	48/0/0/48/3.0
<p>This course provides a broad overview of sociology and how it applies to everyday life. Major theoretical perspectives and concepts are presented, including sociological imagination, culture, deviance, inequality, social change, and social structure. Students also explore the influence of social class and social institutions, such as churches, education, healthcare, government, economy, and environment. The family as a social structure is also examined. Prerequisites: None</p>		
IT150	INTRODUCTION TO PROGRAMMING**	30/30/0/60/3.0
<p>This course will provide students with a disciplined introduction to the program development process with an emphasis on problem-solving and algorithm development. Students will use programming structures common to all languages, including variables and scope, basic data types and the use of control structures including decisions and looping. Prerequisites: None</p>		
IT160	INTRODUCTION TO HEALTH CARE FOR INFORMATION SYSTEMS**	30/30/0/60/3.0
<p>This course provides a brief overview of Health Care laws that effect the operations of information systems. Students will learn how local, state, and federal standards and regulations govern the control and user of electronic health information. Students will explore the characteristics of various health information systems and technologies. <i>Career Services Project</i>. Prerequisites: None</p>		
IT170	LINUX SYSTEMS ADMINISTRATION WITH LAB **	30/30/0/60/3.0
<p>This course explores basic operation and management of local and wide area networks using UNIX or similar network operating systems. Topics include server and workstation software installation, physical network configuration, network security, policy, performance monitoring, and troubleshooting techniques. Network operating systems features, ease of management, utilities, upgrades, and interoperability with other network operating systems and client types are analyzed. Prerequisites: None</p>		
NET120	ROUTING AND SWITCHING WITH LAB**	30/30/0/60/3.0
<p>This course introduces router configuration, maintenance, and troubleshooting with strong emphasis on RIP, EIGRP, and OSPF routing protocols. Learners gain command-line interface (CLI) practice of configuration of router basics for Ethernet and serial communication links, and then advanced focus on how routers communicate with one another via routing protocols. In addition, students apply their TCP/IP understanding and suite of commands to real networks under troubleshooting and traffic (or management scenarios). This course is based on Cisco Networking Academy content. This course mentor student how to configure a router and a switch for basic functionality. By the end of this course, students will be able to configure and troubleshoot routers and switches and resolve common issues with IPv4, IPv6, single-area and multi-area OSPF, virtual LANs, and inter-VLAN routing. Prerequisites: NET110</p>		

NET130	LAN SWITCHING WITH LAB**	30/30/0/60/3.0
<p>This course presents advanced Internet protocol (IP) addressing techniques, intermediate routing protocols, switch configuration and maintenance, virtual local area networks (VLANs) and related protocols, and network design strategies. Students expand their skills in router and switch configuration and maintenance by building and troubleshooting various networks. This course mentor learner how to configure routers and switches for advanced functionality. By the end of this course, learners will be able to configure and troubleshoot routers and switches and resolve common issues with OSPF, EIGRP, and STP. Prerequisites: NET120</p>		
NET140	WAN TECHNOLOGIES WITH LAB**	30/30/0/60/3.0
<p>The course addresses wide area network (WAN) design using various technologies, WAN protocols configuration and troubleshooting, and network management. In the lab, learners expand their skills in router and switch configuration and maintenance by building and troubleshooting various networks, as well as designing, configuring, and troubleshooting various WAN topologies. Use of the following protocols and technologies is expanded or introduced: network address translation and port address translation, dynamic host configuration protocol, point-to-point protocol authentication, integrated services digital network, dial-on-demand routing, and frame relay. This course mentor learner on the WAN technologies and network services employed by converged applications in a complex network. By the end of this course, students will be able to configure and troubleshoot network devices and resolve common issues with data link protocols. Prerequisites: None</p>		
CERT200	CERTIFICATION EXAM PREP (A+)**	30/30/0/60/3.0
<p>This course is a review and a preparation for CompTIA A+ certification based on prior knowledge and skill sets through completing CHCP degree required courses. Learners will systematically develop and sharpen their knowledge and hands-on Cisco network configuration and troubleshooting skills they need to successfully pass their CompTIA A+ exam. Prerequisites: All previous courses Semesters I-IV</p>		
CERT 210	CERTIFICATION EXAM PREP (CCENT)**	30/30/0/60/3.0
<p>This course is a review and a preparation for CCENT certification based on prior knowledge and skill sets through completing CHCP degree required courses. Learners will systematically develop and sharpen their knowledge and hands-on Cisco network configuration and troubleshooting skills they need to successfully pass their CCENT Routing & Switching certification exam. Prerequisites: All previous courses Semesters I-IV</p>		
