



What is network administration?

Network and computer systems administrators are responsible for the day-to-day operation of an organization's computer networks. They organize, install, and support an organization's computer systems, including local area networks (LANs), wide area networks (WANs), network segments, intranets, and other data communication systems.

What is the Network Administration Program?

The Network Administration Program at HCC guides the student from an entry-level knowledge in computer networks to advanced concepts in Ethernet networks, router configuration, TCP/IP networks, routing protocol, local, campus, and wide-area network configuration, network security, wireless networking, optical networks, Voice over IP, the network server, and Linux networking.

What skills do network administrators need to have?

Individuals in the network administration field need to have good communication skills because they frequently must speak with the public, suspects, and/or law enforcement officers. Individuals in this field also need to possess excellent observation and decision-making skills so that they can quickly deter-

mine the best course of action in a dangerous situation. In addition, network administrators need to demonstrate honesty and integrity since they must protect confidential information and expensive equipment.

Essential Work Habits:

- Have the ability to work methodically and be very detail oriented
- Be eager to dig into technical questions and examine them from all sides
- Be enthusiastic and highly adaptable
- Possess strong analytical and diagnostic skills
- Demonstrate skills in innovation and collaboration
- Maintain a current understanding of vulnerabilities from the Internet
- Maintain awareness and knowledge of contemporary standards, practices, procedures and methods
- Have the ability to get the job done

What is the employment outlook?

Employment of network and computer systems administrators is expected to grow 28 percent from 2010 to 2020, faster than the average for all occupations. Demand for these workers is high and should continue to grow as firms invest in newer, faster technology and mobile networks. In addition, information security concerns are increasing for many businesses as managers realize that their current security measures are not enough to combat growing threats. More administrators with proper training will be needed to reinforce network and system security.

Growth is expected in healthcare industries as their use of information technology increases. More administrators will be required to manage the growing systems and networks found at hospitals and other healthcare institutions (source: www.bls.gov/ooh).

What are the average earnings?

Wages will vary depending on location, level of experience, and education. According to the U.S. Bureau of Labor Statistics, the median annual wage of network and computer systems administrators was \$69,160 in May 2010 (source: www.bls.gov/ooh).

What crimes prevent individuals from working in the field?

Applicants who have been convicted of a felony or involved in physical or domestic abuse will be disqualified from working in network administration. Prior to employment, applicants are expected to undergo rigorous background checks, drug tests, and panel interviews.

In addition, misdemeanor offenses may disqualify individuals for employment at certain organizations. Examples of misdemeanor offenses that may prevent employment include:

- Property Crimes—Offenses that involve taking or damaging the property of another person without his or her knowledge or consent.
- Serious Traffic Violations—Offenses that involve serious misconduct while driving a motor vehicle such as DUI/DWI.
- Sex Crimes—Offenses that involve illegal sexual conduct. Examples include pandering (i.e., soliciting a prostitute), indecent exposure, and sexual battery (i.e., uninvited sexual advances).
- Drug Crimes—Offenses that involve the possession, sale, distribution, or sale of illegal drugs
- Violent Crimes including domestic violence—Offenses that involve an act of violence against another person. The violence can be verbal or mental and can include making terrorist threats or stalking.
- Crimes Against Public Order or Public Administration—Offenses that involve some kind of action against a public official, a government institution, or a breach of the public peace. Examples include disorderly conduct, public intoxication, failing to appear in court, unlawful assembly, and giving a false name or driver's license to a police officer.

Why should you choose HCC?

HCC's new, state-of-the-art computer network labs allow students to gain hands-on experience with the latest network software tools and network hardware that includes routers, switches, and firewalls.

The networking curriculum is overseen by a strong and active network advisory group comprised of representatives from local industry, educational institutions, and government agencies.

The curriculum has recently been streamlined by separating many of the network administration and cybersecurity courses into two distinct programs. Those interested in cybersecurity can view the cybersecurity program requirements online at www.hagerstowncc.edu/cyber.

HCC has articulation agreements with several regional four-year colleges and universities, which makes it extremely easy for students to complete their bachelor's degrees.

Students are encouraged to transfer to institutions that have been designated as National Centers of Academic Excellence in Information Assurance Education (CAEIAE) to ensure that they continue to receive quality information systems training once they graduate from HCC. Local CAEIAE institutions include Capitol College, George Mason University, Johns Hopkins University, Towson University, and University of Maryland University College.

Upon program completion, students will be prepared for several industry standard certification exams including:

- CompTIA's A+, Network+, and Security +
- Cisco Certified Network Associate (CCNA)
- Microsoft Certified Professional (MCTS, MCITP)

Job prospects will be best for college graduates who possess the latest technological skills, particularly graduates who have supplemented their formal education with relevant work experience.

For more information about HCC graduation rates, the median debt of students who completed the program, and other important information, visit www.hagerstowncc.edu/network-admin.

What are the program options?

Students can earn a certificate or an A.A.S. degree in network administration.

A.A.S. Degree

Information Systems Technology, Option in Network Administration

The career program in network administration is designed for students who plan to enter the field of information technology. Major areas of study include network fundamentals, design, management, troubleshooting, and operating systems. Students who plan to transfer to a four-year program should identify an intended transfer institution as early as possible and complete appropriate courses. Students should always consult with advisors and transferring institutions for specific requirements as these are subject to change.

General Education Requirements 21 credits Arts/Humanities

Select from approved General Education course list 3

Behavioral/Social Sciences Select from approved General Education course list.....3

Biological/Physical Science Select from approved General Education course list.....3

Diversity Select from approved General Education course list...3

English ENG 101 English Composition..... 3 ENG 112 Technical Writing I 3

Mathematics MAT 101 College Algebra 3 OR

Another MAT course from approved General Education Course list..... 3-4

Program Requirements 35 credits

IST 102	Introduction to Information Technology...	3
IST 108	Microsoft Operating System.....	3
IST 109	UNIX/Linux Operating System	3
IST 150	PC Tech: Repair and Troubleshooting...	3
IST 151	PC Tech: Operating Systems	3
IST 154	Networking Basics.....	3
IST 155	Networking I	4
IST 156	Networking II	4
IST 160	Introduction to Security Fundamentals..	3
IST 253	TCP/IP	3
IST 261	Server Management I.....	3

Restricted Electives 3 credits

Select one course from the following list.

CYB 210	Ethics in the Information Age	(3)
CYB 240	Ethical Hacking Fundamentals	(3)
IST 140	Fundamentals of Wireless Computing.(3)	
IST 254	Network Design and Defense.....	(3)
IST 269	Internship I.....	(3)

Free Electives 1 credit

Select another course, minimum of one credit, to complete the 60-credit requirement.

Degree Requirement..... 60

Certificate

Information Systems Technology Network Administration

This program is for the student interested in a career in networking concepts. Major concentration will be network fundamentals, design and management, troubleshooting and operating systems. Classes are conducted in hands-on labs. Currently, three national

certifications are a part of this option: A+®, CISCO®, and MSCA® (Microsoft Certified Systems Administrator) Certification.

Program Requirements 30 credits

IST 102	Introduction to Information Technology..	3
		*CW 120
IST 108	Microsoft Operating System.....	3
IST 150	PC Tech: Repair and Troubleshooting....	3
IST 151	PC Tech: Operating Systems	3
IST 154	Networking Basics.....	3
IST 155	Networking I	4
		*CW 150
IST 156	Networking II	4
		*CW 151
IST 255	Networking III	4
		*CW 250
IST 261	Server Management I.....	3
		*CW 230

Restricted Electives 3 credits

Electives should be selected in consultation with the Technology and Computer Studies Division to satisfy career goals and/or transfer college requirements. Select elective credits from the following list.

Approved courses are listed below:

IST 109	UNIX/Linux Operating System	(3)
		*CW 140
IST 140	Fundamentals of Wireless Computing (3)	
IST 160	Introduction to Security Fundamentals...	(3)
IST 166	Computer Forensics I—	
	Principles and Practices	(3)
IST 173	Database Fundamentals.....	(3)
IST 262	Windows Network Infrastructure.....	(3)

Certificate Requirement 33**

* CyberWATCH Designator

** Note: This certificate must be completed within four years because of constantly changing technology. Students who do not complete within four years will fall under the latest catalog.

Contact information:

Steve Shank
Professor, Information Systems Technology
240-500-2536
spshank@hagerstowncc.edu

Sherry Plank
Administrative Office Associate
240-500-2201
slplank@hagerstowncc.edu

Recommended Professional Organizations

Information Systems Security Association:
www.issa.org

InfraGard:
www.infragard.org

International Information Systems Security Certification Consortium (ISC2):
www.isc2.org