Information Technology

Cybersecurity concentration
Associate in Applied Science Degree (A.A.S.)

**Business, Technology, and
Professional Studies Division**
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The **Cybersecurity concentration in Information Technology** associate degree prepares students for jobs protecting computer systems and networks against cyber threats such as viruses, spyware, and intrusion by hackers. These professionals design, install, and manage network control tools and other security mechanisms that protect computer systems from unauthorized access or data loss. Part prevention and part critical response, Cybersecurity supports careers such as network security specialist, security administrator, and network security support engineer.

PROGRAM OUTCOMES

- Describe the elements of information security, including possible threats and attack vectors as well as the motives, goals, and objectives of information security attacks;
- Explain what steps can be taken to secure a system, and provide secure network management and reporting;
- Secure routers and switches and their associated networks, including installing, troubleshooting, and monitoring network devices to maintain integrity, confidentiality, and availability of data and devices;
- Prevent common security threats, including implementing firewall and VPN technologies and perimeter defenses, conducting vulnerability and penetration testing, and scanning networked systems;
- Describe the security weaknesses inherent in wireless networks, and implement solutions to address them;
- Use printed and online technical documentation, and demonstrate written and oral communication skills;
- Work effectively individually and in workgroups to install and implement information security technology;
- Pass industry certifications, including CompTIA's Security+; EC-Council's CEH (Certified Ethical Hacker); and Cisco's CCENT, CCNA, and CCNA: Security.

Admission to the program requires a high school diploma or its equivalent, one year of high school algebra, and computer literacy. Applicants must demonstrate competency in English composition, reading, and mathematics, as determined by placement testing. Students who are required to complete foundations courses must plan their curriculum with an academic advisor.

The Cybersecurity concentration in Information Technology A.A.S. was not developed as a transfer curriculum; however, students have successfully transferred to, and completed bachelor's degrees at, several technically-oriented institutions including NJIT, Fairleigh Dickinson University, DeVry University, Drexel University, and Peirce College.

SEE ALSO:

Computer Information Systems degree program
Information Technology degree program
Network Engineering Technology certificate program

DEGREE CURRICULUM

2023-2024 Academic Year

INFO.TECH.CYBER.AAS
CIP 110201

The course sequence below represents a recommended example of how this degree program can be completed in two years, presuming a Fall Term start and satisfaction of all Developmental Studies (foundation courses) requirements and prerequisites. Actual approaches toward completion depend on each student's anticipated transfer institution, career objectives, or other individual circumstances.

Students are encouraged to meet regularly with an academic advisor or Success Coach to consider options, establish plans, and monitor progress.

Code	Course (lecture/lab hours)	Credits	To Do This Semester
FIRST SEMESTER			
ENG 101	English Composition I (3/0)	3	✓ Meet with your faculty advisor to complete an academic plan. Make sure you are aware of any course prerequisites you may need to take, and how long it will take to complete your degree.
NET 102	Introduction to PC Hardware and Software (2/3)	3	
NET 104	Fundamentals of Computer Networks (2/2)	3	
NET 120	Windows Desktop OS Administration (2/2)	3	
IST —	Computer Concepts requirement (2/2)	3	✓ Use your online tools: Check your MercerMail daily, utilize features of Office 365, and get to know Student Planning.
	• Select from IST 101, 102, or in consultation with an academic advisor.		

SECOND SEMESTER

ENG 102	English Composition II (3/0)	3
MAT 115	Algebra and Trigonometry I (3/0)	3

- Students intending to transfer should substitute a higher-level mathematics course. Select in consultation with an academic advisor.

NET 103	IT Essentials (2/3)	3
NET 122	Windows Server OS Administration (2/2)	3
NET 130	Routing and Switching Essentials (2/2)	3

✓ Transitioning to college can be challenging. Meet with your Success Coach for guidance and support.

✓ Apply for financial aid by May 1.

✓ Contact professors with questions and use their office hours to develop a connection. Talk with them to get the inside scoop on how your profession works.

✓ Be sure to visit the Career Services office to explore jobs, internships, and career information and get help with your resume and other career tools.

✓ Apply for Continuing Student scholarships at www.mccc.edu/m-scholarships.

THIRD SEMESTER

ECO 111	Macroeconomics (3/0)	3
NET 212	Introduction to Linux (2/2)	3
NET 230	Scaling Networks (2/2)	3
NET 240	Network Security (2/2)	3

✓ Keep in contact with each professor and your faculty advisor. Make sure you are on track to graduate on time.

NET 241	Cyber Security Analytics (2/2)	3

FOURTH SEMESTER

BUS 230	Global Environment of Business (3/0)	3
IST 110	Introduction to Python (2/2)	3
NET 244	Network Defense and Countermeasures (2/2)	3
NET 245	Ethical Hacking (2/2)	3
PHI 204	Ethics (3/0)	3

- May be substituted with another Humanities or Social Science general education elective.

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NOTE: One or more NET courses may be substituted with acceptable IST, CIS, COS, EET or SST courses, in consultation with an academic advisor.