

# Information Technology, AAS

## Network Systems Cybersecurity – Concentration

Academic Year 2024-2025

### Program Description:

The Associate in Applied Science Degree concentration in Network Systems Administration offers comprehensive network training from Mountwest Community and Technical College's Cisco Networking Academy. Within the two-year Associate Degree program, students take courses preparing them for industry certifications from Cisco, CompTIA, and EC Council taught by certified professors. This concentration provides specialized skills in network administration, defense, and cybersecurity. Students will take courses preparing them for the following certifications:

CompTIA's A+

CompTIA's Linux+

CompTIA's Security+

Cisco's CCNA (Cisco Certified Network Associate)

Certified Ethical Hacker (CEH)

### Career Outlook and Salary Forecast:

For the most current information please refer to the Bureau of Labor Statistics "Occupational Outlook Handbook" found at <https://www.bls.gov/ooh/computer-and-information-technology/information-security-analysts.htm>

### Program Admission Requirements:

The college adheres to an open admission policy which means applicants with a high school diploma or a GED are eligible for admission. Applicants with neither a high school diploma nor a GED may be admitted on a conditional basis.

### Program Outcomes:

- Install and configure a Windows Server hybrid network based on business needs
- Identify trends including current threats in order to protect personal and company data
- Recite essential knowledge for all cybersecurity domains including information security, systems security, network security, ethics and laws, and defense and mitigation techniques used in protecting businesses
- Apply the core security concepts and skills needed to configure and troubleshoot computer networks and help ensure the integrity of devices and data
- Monitor, detect, analyze, and respond to cybercrime, cyberespionage, inside threats, advanced persistent threats, regulatory requirements, and other cybersecurity issues facing organizations
- Install and configure an interconnected network device (ICND) infrastructure based on business needs

### Career Description:

Information security analysts typically do the following:

- Monitor their organization's networks for security breaches and investigate a violation when one occurs
- Install and use software, such as firewalls and data encryption programs, to protect sensitive information
- Prepare reports that document security breaches and the extent of the damage caused by the breaches
- Conduct penetration testing, which is when analysts simulate attacks to look for vulnerabilities in their systems before they can be exploited

Information security analysts must stay up to date on IT security and on the latest methods attackers are using to infiltrate computer systems. Analysts need to research new security technology to decide what will most effectively protect their organization. MCTC's Network Systems Cybersecurity option provides the fundamental cybersecurity knowledge and skills with specific network security training crucial for entry into information security positions in public corporations and government entities.

### Contact Information:

Patrick Smith

Room 209

Phone: 304-710-3398 or 1-866-N-ROLLED (1-866-676-5533)

E-mail: [smith288@mctc.edu](mailto:smith288@mctc.edu)

Scott Nicholas

Room 203

Phone: 304-710-3423 or 1-866-N-ROLLED (1-866-676-5533)

E-mail: [nicholas@mctc.edu](mailto:nicholas@mctc.edu)

**Information Technology Major Code – CI20 • Network Systems Cybersecurity Concentration Code – CI34**

<b>Name:</b>	<b>ID Number 942-</b>
<b>Educational Counselor:</b>	
<b>Faculty Advisor:</b>	

COURSE	REQUIREMENTS	SEM	HRS	GR	SUBSTITUTE/REPEAT CRS	SEM	CR
IT 121	Fundamentals of Network Cybersecurity		3				
IT 131	Introduction to Networking <sup>1</sup>		4				
IT 141	Networking Systems II <sup>2</sup>		4				
IT 270	Computer Essentials and Application		4				
IT 297	Co-Curricular Experiences in Networking		0				
			15				
ENL 131	Business and Technical Writing <sup>3</sup>		3				
IT 221	Advanced Operating Systems <sup>4</sup>		3				
IT 224	Fundamentals of Network Security <sup>5</sup>		3				
IT 231	Networking Systems III <sup>6</sup>		4				
IT 241	Networking Systems IV <sup>7</sup>		4				
IT 297	Co-Curricular Experiences in Networking		0				
			17				
COM 125	Interpersonal Communication		3				
SOCI 210	Fundamentals of Sociology		3				
IT 232	Network Systems Cybersecurity I <sup>8</sup>		4				
IT 251	Advanced Operating Systems II <sup>12</sup>		3				
IT 297	Co-Curricular Experiences in Networking		0				
			13				
IT 233	Network Systems Cybersecurity II <sup>9</sup>		4				
IT 254	Advanced Network Security <sup>13</sup>		4				
IT 299	Information Technology Internship/Coop <sup>10</sup>		3				
MAT 120	Applied Professional Math <sup>11</sup>		3				
PSYC 200	General Psychology		3				
			17				
<b>Hours Required for Graduation: 62</b>							

<sup>1</sup> IT 131 has a corequisite of IT 141.

<sup>2</sup> IT 141 has a corequisite of IT 131.

<sup>3</sup> ENL 131 has a prerequisite of placement in 100 or above level English or a corequisite of ENL 095.

<sup>4</sup> IT 221 has a prerequisite of IT 120 or IT 131.

<sup>5</sup> IT 224 has a prerequisite of IT 101, 102 or 270.

<sup>6</sup> IT 231 has a prerequisite of IT 141 and a corequisite of IT 241.

<sup>7</sup> IT 241 has a corequisite of IT 231.

<sup>8</sup> IT 232 has a prerequisite of IT 141 and IT 224.

<sup>9</sup> IT 233 has a prerequisite of IT 232.

<sup>10</sup> IT 299 has a prerequisite of permission.

<sup>11</sup> Math 120 has prerequisite of placement in 100-level Math or a minimum ACT Math score of 19 or SAT Math score of 510.

<sup>12</sup> IT 251 has a prerequisite of IT 221.

<sup>13</sup> IT 254 has a prerequisite of IT 121, IT 224 and IT 251.