

NETWORK SECURITY ENGINEERING: CP

Certificate of Proficiency | 36 credit hours minimum

Area of Interest: Science, Technology, Engineering, and Math (STEM)

Program Website (<https://stlcc.edu/programs-academics/pathways/s-t-e-m/network-engineering/>)

Academic Advising (<https://stlcc.edu/admissions/advising/>)

Program Description:

Network Security Engineering Certificate of Proficiency is a skill-oriented program that prepares students to design, implement, troubleshoot, maintain, and secure enterprise network infrastructure. It starts with the foundation principles of local and wide-area, multi-segmented networks, and then covers a wide range of skills associated with all aspects of enterprise level networks for business. The design and implementation skills developed include those required for network and application servers, desktop hosts, infrastructure cabling and connection devices such as switches and routers (including wireless), security appliances, and virtualization of resources for performance optimization. The courses in the program provide a combination of online, distance learning, and intensive, classroom-based, hands-on skills development. The demonstration of hands-on skills is critical to employers. Students completing the program are prepared for a variety of industry certification exams as well as entry-level employment technical interviews.

Location. This program is offered in its entirety at Forest Park.

Related Programs. The Computer and Information Technology Department offers an associate and certificates in the following areas:

Cisco Networking Academy: CCNA, Certificate of Specialization (<http://catalog.stlcc.edu/programs/cisco-networking-academy-ccna-certificate-specialization/>)

CompTIA A+ Certification, Certificate of Specialization (<http://catalog.stlcc.edu/programs/comptia-certification-certificate-specialization/>)

CompTIA A+ and Security+ Certifications, Certificate of Specialization (<http://catalog.stlcc.edu/programs/comptia-security-certificate-specialization/>)

IT Help Desk/End User Support, Certificate of Specialization (<http://catalog.stlcc.edu/programs/it-help-desk-end-user-support-certificate-specialization/#text>)

Network Security Engineering, Associate in Applied Science (<http://catalog.stlcc.edu/programs/network-engineering-aas/>)

Cost of Attendance. For more information on cost of attendance visit **MoSCORES** (<https://scorecard.mo.gov/Search/>).

Program Career and Salary Information. Pursuant to Missouri HB 1606 (2018), information regarding the number of credit hours, program length, employment rate, wage data, and graduates employed in careers related to their program of study at St. Louis Community College can

be found at the following URL: <https://scorecard.mo.gov/scorecard/> (https://www.google.com/url?q=https://scorecard.mo.gov/scorecard/&sa=D&ust=1555536894857000&usg=AFQjCNG1xf3E_i2lO96zEytILO-s5xaJCQ). Search using School / Program “St. Louis Community College” and choose the degree or credential type of interest.

The following limitations to the data apply: Information provided is based on the most recent cohorts available. Typically, most recent cohorts for wage and completion data are six years prior to the current academic year. Time to complete a program of study varies depending on the number of credit hours students earn per semester.

Interested in this program? Start the enrollment process by visiting the **Apply to STLCC** (<https://www.stlcc.edu/admissions/apply-to-stlcc/>) page.

At the completion of the program, students are expected to:

1. employ the command line interface (CLI) to implement, troubleshoot, maintain, and secure an enterprise network.
2. use network methodologies to implement a secure Local Area Network (LAN) network.
3. describe the proper implementation and use of Virtual Local Area Networks (VLANs), trunks, Etherchannel, Spanning Tree Protocol (STP), routing, and First Hop Redundancy Protocols (FHRP).
4. explain the network layered models and the use of global, local, and internal network addressing.
5. explain how to initiate, monitor, and secure data as it is traveling across the network.

Program of Study

Code	Title	Credit Hours
Program Requirements		
IS 229	Unix/Linux I	3
IS 237	Fundamentals of Information Assurance/Security - CompTIA Security+	3
IS 280	Python	3
IT 100	Introduction to Cybersecurity	1
IT 101	Cisco Networking Academy I: Introduction to Networks	5
IT 201	Cisco Networking Academy II: Switching, Routing, and Wireless Essentials	5
IT 202	Cisco Networking Academy III: Enterprise Networking, Security, and Automation	5
Select 1 (5 credits)		5
IT 208	Cisco Networking Academy: CCNA Security	
IT 250	Cisco Networking Academy: CCA Cybersecurity Operations	
Select 2 of the Following Electives (6 credits minimum)		6
IS 130	Hardware Support - CompTIA A+ Core 1 (Hardware)	
IS 264	Unix/Linux II	
IT 102	Desktop Software Support - CompTIA A+ Core 2 (Software)	
IT 120	Enterprise Security Management	
IT 121	Secure E-Commerce	
IT 211	Introduction to Virtualization and Cloud Computing	
IT 212	Ethical Hacking	

IT 215	Cloud Security
IT 216	Digital Forensics
IT 251	Cisco Networking Academy: CCNA DevNet Associate

Full-Time Academic Plan

PLEASE NOTE: If you originally enrolled at STLCC prior to Fall 2025, you may need to view an **archived catalog** (<http://catalog.stlcc.edu/archived-catalogs/>) for your correct program requirements. Please speak with an advisor or the program coordinator for more information.

Total Credit Hours **36**

Code	Title	Hours	Prerequisites	Milestones/Notes
First Year				
Fall				
IT 100	Introduction to Cybersecurity	1	Reading Proficiency	Offered Fall and Spring. Exploratory Course.
IS 229	Unix/Linux I	3	Reading Proficiency	Offered Fall, Spring, and Summer. Gateway Course, Critical Course.
IT 101	Cisco Networking Academy I: Introduction to Networks	5	Reading Proficiency	1st 8 weeks. Offered Fall, Spring, and Summer. Gateway Course, Critical Course.
IT 201	Cisco Networking Academy II: Switching, Routing, and Wireless Essentials	5	IT 101 with a minimum grade of "C", and Reading Proficiency	2nd 8 weeks. Offered Fall, Spring, and Summer.
	Credit Hours	14		
Spring				
IS 237	Fundamentals of Information Assurance/Security - CompTIA Security +	3	IT 102 or IS 229 with a minimum grade of "C" and Reading Proficiency	Offered Fall, Spring, and Summer
IT 202	Cisco Networking Academy III: Enterprise Networking, Security, and Automation	5	IT 201 with a minimum grade of "C", and Reading Proficiency	1st 8 weeks. Offered Fall and Spring.
IT 208 or 250	Cisco Networking Academy: CCNA Security or Cisco Networking Academy: CCCA Cybersecurity Operations	5	IT 201 with a minimum grade of "C" or a Cisco CCENT or CCNA certification and Reading Proficiency	2nd 8 weeks. One of the two classes is offered Fall and Spring.
	Credit Hours	13		
Second Year				
Fall				
XXX xxx	Program Elective	3		Recommendations: IS 264 Unix/Linux II, IT 120 Enterprise Security Management, IT 212 Ethical Hacking, IT 216 Digital Forensics, IT 121 Secure E-Commerce
XXX xxx	Program Elective	3		Recommendations: IS 264 Unix/Linux II, IT 120 Enterprise Security Management, IT 212 Ethical Hacking, IT 216 Digital Forensics, IT 121 Secure E-Commerce
IS 280	Python	3	Reading Proficiency	Offered Fall and Spring
	Credit Hours	9		
	Total Credit Hours	36		

Program Electives

Code	Title	Credit Hours
IS 130	Hardware Support - CompTIA A+ Core 1 (Hardware)	3
IS 264	Unix/Linux II	3
IT 102	Desktop Software Support - CompTIA A+ Core 2 (Software)	3
IT 120	Enterprise Security Management	3
IT 121	Secure E-Commerce	3
IT 211	Introduction to Virtualization and Cloud Computing	3
IT 212	Ethical Hacking	3
IT 215	Cloud Security	3

IT 216	Digital Forensics	3
IT 251	Cisco Networking Academy: CCNA DevNet Associate	5

Critical Courses: Critical courses are most important to a student's declared major and most strongly predict later success in the major. A critical course requires a minimal grade to progress to higher-level courses.

Exploratory Courses: Exploratory courses are first-semester courses that introduce the program and career field.

Gateway Courses: Gateway courses are courses in many career pathways that must be completed before progression in higher-level courses. These may be the same as critical and/or exploratory courses.

*Click on the hyperlinked course number to view additional information about the course.

**Students completing a course that has been assigned a MOTR number may transfer that course to any public institution in Missouri. Those who complete CORE 42 requirements will have that verification on their transcript.

*** It is your responsibility to verify that the courses listed above will transfer to the four-year institution of your choice. Maximize your transfer credits/classes by meeting with an academic advisor.

Part-Time Academic Plan

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Code	Title	Hours	Prerequisites	Milestones/Notes
First Year				
Fall				
IT 100	Introduction to Cybersecurity	1	Reading Proficiency	Offered Fall and Spring. Exploratory Course.
IS 229	Unix/Linux I	3	Reading Proficiency	Offered Fall, Spring, and Summer. Gateway Course, Critical Course.
IS 280	Python	3	Reading Proficiency	Offered Fall and Spring
	Credit Hours	7		
Spring				
IT 101	Cisco Networking Academy I: Introduction to Networks	5	Reading Proficiency	1st 8 weeks. Offered Fall, Spring, and Summer. Gateway Course, Critical Course.
IT 201	Cisco Networking Academy II: Switching, Routing, and Wireless Essentials	5	IT 101 with a minimum grade of "C", and Reading Proficiency	2nd 8 weeks. Offered Fall, Spring, and Summer.
	Credit Hours	10		
Summer				
IS 237	Fundamentals of Information Assurance/Security - CompTIA Security +	3	IT 102 or IS 229 with a minimum grade of "C" and Reading Proficiency	Offered Fall, Spring, and Summer
	Credit Hours	3		
Second Year				
Fall				
IT 202	Cisco Networking Academy III: Enterprise Networking, Security, and Automation	5	IT 201 with a minimum grade of "C", and Reading Proficiency	1st 8 weeks. Offered Fall and Spring.

IT 208 or 250	Cisco Networking Academy: CCNA Security or Cisco Networking Academy: CCCA Cybersecurity Operations	5	IT 201 with a minimum grade of "C" or a Cisco CCENT or CCNA certification and Reading Proficiency	2nd 8 weeks. One of the two courses is offered Fall and Spring.
	Credit Hours	10		
Spring				
XXX xxx	Program Elective	3		Recommendations: IS 264 Unix/Linux II, IT 120 Enterprise Security Management, IT 212 Ethical Hacking, IT 216 Digital Forensics, IT 121 Secure E-Commerce
XXX xxx	Program Elective	3		Recommendations: IS 264 Unix/Linux II, IT 120 Enterprise Security Management, IT 212 Ethical Hacking, IT 216 Digital Forensics, IT 121 Secure E-Commerce
	Credit Hours	6		
	Total Credit Hours	36		

Program Electives

Code	Title	Credit Hours
IS 130	Hardware Support - CompTIA A+ Core 1 (Hardware)	3
IS 264	Unix/Linux II	3
IT 102	Desktop Software Support - CompTIA A+ Core 2 (Software)	3
IT 120	Enterprise Security Management	3
IT 121	Secure E-Commerce	3
IT 211	Introduction to Virtualization and Cloud Computing	3
IT 212	Ethical Hacking	3
IT 215	Cloud Security	3

IT 216	Digital Forensics	3
IT 251	Cisco Networking Academy: CCNA DevNet Associate	5

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