NETWORK ENGINEERING: AAS

Associate in Applied Science | 63 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: Forest Park

The Associate in Applied Science degree in Network Engineering is a skill-oriented program that prepares students to design, implement, troubleshoot, maintain, and secure enterprise networks. Foundation principles of local, wide-area, and multi-segmented networks lead to a mastery of skills associated with support of enterprise level networks including network and application servers, desktop hosts, infrastructure cabling, and connection devices such as switches and routers (including wireless), security appliances, virtualization of resources for performance optimization, and operating policies. The courses in the program provide a combination of theoretical and hands-on skills development. The demonstration of hands-on knowledge and skills is vital for employment in the IT networking industry. Students completing the program are prepared for a variety of industry certification exams as well as entry-level employment.

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

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

> Cisco Networking: CCNA, Certificate of Specialization (http://catalog.stlcc.edu/programs/cisco-networking-academy-ccna-certificate-specialization/)
>
> CompTIA A+ Certificate, 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 Engineering, Certificate of Specialization (http://catalog.stlcc.edu/programs/network-engineering-certificate-proficiency/)

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. develop a company-wide security solution or a security plan that follows industry best practices as a member of a team.
3. use network methodologies to implement a secure Local Area Network (LAN) network.
4. 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).
5. explain the network layered models and the use of global, local, and internal network addressing.
6. explain how to initiate, monitor, and secure data as it is traveling across the network.
7. deploy network security by configuring and monitoring defensive measures to protect the network.

Missouri Civics Examination. Students entering college for the very first time in fall 2019 and who intend to complete an associate's degree must successfully complete a civics examination. Information on who is eligible for a waiver can be found on the STLCC website (https://stlcc.edu/programs-academics/missouri-civics-exam.aspx).

Program of Study

Code	Title	Credit Hours
General Education		
ENG 101	College Composition I (MOTR ENGL 100)	3
ENG 103	Report Writing (MOTR ENGL 110)	3
or ENG 102	College Composition II (MOTR ENGL 200)	
MTH 180	Introductory Statistics (MOTR MATH 110) (or MTH 180S)	3
XXX xxx	Social & Behavioral Sciences: Civics Requirement	3
XXX xxx	Natural Science Elective/Math Elective: (MOTR Requirement)	4
Program Requirements		
IS 130	Hardware Support - CompTIA A+ Core 1 (Hardware)	3
IT 102	Desktop Software Support - CompTIA A+ Core 2 (Software)	3
IS 237	Fundamentals of Information Assurance/Security - CompTIA Security+	3
IS 229	Unix/Linux I	3
IS 264	Unix/Linux II	3

IT 120	Enterprise Security Management	3
IT 121	Secure E-Commerce	3
IT 235	Network Infrastructure Design	3
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
IT 211	Introduction to Virtualization and Cloud Computing	3
Select One (5 credits):		5
IT 208	Cisco Networking Academy: CCNA Security	

IT 250	Cisco Networking Academy: CCCA Cybersecurity Operations	
Total Credit Hours		**63**

Full-Time Academic Plan

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PLEASE NOTE: If you originally enrolled at STLCC prior to Spring 2024, you may need to view an archived catalog (https://www.stlcc.edu/programs-academics/course-catalog/) for your correct program requirements. Please speak with an advisor or the program coordinator for more information.

Code	Title	Hours	Prerequisites	Milestones/Notes
First Year				
Fall				
IS 229	Unix/Linux I	3	Reading Proficiency	Offered Fall and Spring
IT 102	Desktop Software Support - CompTIA A + Core 2 (Software)	3	Reading Proficiency	Offered Fall and Spring
IT 101	Cisco Networking Academy I: Introduction to Networks	5	Reading Proficiency	Offered Fall and Spring 1st 8 weeks
IT 201	Cisco Networking Academy II: Switching, Routing, and Wireless Essentials	5	IT 101 with a minimum grade of "C", and Reading Proficiency	Offered Fall and Spring 2nd 8-weeks
	Credit Hours	**16**		
Spring				
IS 264	Unix/Linux II	3	IS 229 with a minimum grade of "C" and Reading Proficiency	Offered Fall and 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 and Spring
IT 202	Cisco Networking Academy III: Enterprise Networking, Security, and Automation	5	IT 201 with a minimum grade of "C", and Reading Proficiency	Offered Fall and Spring 1st 8-weeks
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	One of these will be offered in Fall and Spring 2nd 8 weeks
	Credit Hours	**16**		
Second Year				
Fall				
IS 130	Hardware Support - CompTIA A+ Core 1 (Hardware)	3	Reading Proficiency	Offered Fall and Spring
XXX xxx	Natural Science/Mathematics Elective (MOTR Requirement) (http://catalog.stlcc.edu/general-education/)	4		

ENG 101	College Composition I (MOTR ENGL 100)	3	Placement score or ENG 030 or ENG 070 with a grade of "C" or better or recommendation of department and Reading Proficiency or concurrent enrollment in RDG 079	
IT 235	Network Infrastructure Design	3	IT 201 with a minimum grade of "C" and Reading Proficiency	Offered Fall only
IT 211	Introduction to Virtualization and Cloud Computing	3	IT 201 with a minimum grade of "C", and Reading Proficiency	
	Credit Hours	**16**		
Spring				
XXX xxx	Social & Behavioral Sciences: Civics (http://catalog.stlcc.edu/general-education/)	3		
IT 120	Enterprise Security Management	3	IS 237 with a minimum grade of "C" and Reading Proficiency	Offered Spring only
MTH 180	Introductory Statistics (MOTR MATH 110)	3	Satisfactory scores on placement test, and Reading Proficiency	MTH 180S will also fulfill this requirement, but only 3 credits will apply toward the degree.
ENG 102 or 103	College Composition II (MOTR ENGL 200) or Report Writing (MOTR ENGL 110)	3	ENG 101 with a minimum grade of "C" and Reading Proficiency	
IT 121	Secure E-Commerce	3	IS 229 and IS 237, both with a minimum grade of "C" and Reading Proficiency	
	Credit Hours	**15**		
	Total Credit Hours	**63**		

*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.