

**\*\*\*REMEMBER TO REGISTER EARLY\*\*\***

## Program Description

The Cyber Defense certificate is designed to prepare participants with foundation-level skills for a job in computer networking and security. The curriculum in this program will help prepare students for the following certifications: CompTIA Net+, CompTIA Security+, Cisco Certified Entry Networking Technician (CCENT) and EC-Council Certified Ethical Hacker (CEH).

*The 30-credit Cyber Defense Certificate transfers seamlessly into LSC's Network Administration and Security Diploma (58 credits), and AAS degree (72 credits).*

## Program Outcomes

- Describe the OSI Reference Model, layered communications principles and routing/switching principles with associated devices, as well as use these concepts effectively in verbal and written communication
- Manage Cisco router hardware and the Cisco Internet Operating System (IOS), including planning, installation, configuration, management, upgrading and troubleshooting of routers and switches
- Analyze organizational network needs, as well as design and implement networks that include hardware/software configuration and management and security (access control)
- Determine the factors involved in developing a secure information security strategy
- Describe and identify common security threats and attacks and describe how to safeguard against them
- Apply a common ethical hacking methodology to carry out a penetration test and describe how to implement countermeasures for these types of attacks

## Required Courses

Number	Name	Credits	Term
CIS 1402	Foundations of CIS	3	
CIS 1946	CISCO Networking I	3	
CIS 1745	Network Administration: Unix	3	
CIS 1810*	Network Administration: Security	3	
CIS 1947*	CISCO Networking II	3	
CIS 1952*	Network Administration: Windows Server	3	
CIS 2811*	Intrusion Detection/Prevention Systems Fundamentals	3	
CIS 2812*	Network Security Fundamentals	3	
CIS 2813*	Network Forensics and Incident Response	3	
CIS 2814*	Ethical Hacking and Systems Defense	3	

**Total Credits 30**

\*Requires a prerequisite or a concurrent course

## Pre-program Requirements

Successful entry into this program requires a specific level of skill in the areas of English/reading and mathematics.

### English/Reading:

- A score of 78 or higher on the reading comprehension portion of the Accuplacer, or
- Completion of ENGL/READ 0950 or 0955 (or equivalent course or higher). ENGL/READ 0955 may be taken concurrently with Semester I coursework.

### Mathematics:

- A score of 71 or higher on the Elementary Algebra Skills portion of the Accuplacer, or
- Completion of MATH 0460 (or equivalent course or higher). MATH 0460 may be taken concurrently with Semester I coursework.



**Cyber Defense Certificate - 30 credits**  
Program Area: Computer Information Systems (Fall 2019)

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For interpretation of test results and selection of appropriate coursework; or general information about the program, admissions, financial aid, and getting started at LSC, contact the [professional advising team](mailto:pat@lsc.edu) (pat@lsc.edu) or 218-733-7601

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For more information about the Cyber Defense Certificate (30 credits) including course descriptions, course prerequisites, the gainful employment disclosure, and potential career opportunities, see the [program website](https://degrees.lsc.edu/cyber-defense/) (https://degrees.lsc.edu/cyber-defense/)

- or -

Contact Faculty Advisors, [Tom Gustafson](mailto:thomas.gustafson@lsc.edu) (thomas.gustafson@lsc.edu) or 218-733-7773, [Valarie McLain](mailto:valarie.mclain@lsc.edu) (valarie.mclain@lsc.edu) or 218-733-7763



MINNESOTA STATE

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