



Cyber Defense Certificate - 30 credits
 Program Area: Computer Information Systems (Fall 2021)

*****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 RSTECH, 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 | Unix System Administration | 3 | |
| CIS 1810* | Security Fundamentals | 3 | |
| CIS 1947* | CISCO Networking II | 3 | |
| CIS 1952* | Windows Server Administration | 3 | |
| CIS 2811* | Intrusion Detection/Prevention Systems Fundamentals | 3 | |
| CIS 2812* | Network Security | 3 | |
| CIS 2813* | 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:

- Eligible for ENGL 1106 - College Composition I, or
- Completion of ENGL/READ 0950/0955 (or equivalent or higher). ENGL/READ 0950/0955 may be taken concurrently with Semester I coursework.

Mathematics:

- Eligible for MATH 0970 - Intermediate Algebra, or
- Completion of MATH 0950/0955 (or equivalent or higher). MATH 0950/0955 may be taken concurrently with Semester I coursework.

There are other ways to qualify. Visit [Course Placement](http://lsc.edu/course-placement) (lsc.edu/course-placement) to find out more.



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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:advising@lsc.edu) (advising@lsc.edu) or 218-733-7601

For more information about the Cyber Defense Certificate including course descriptions, course prerequisites, the program report, 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) at 218-733-7773 or [Matthew McCullough](mailto:matthew.mccullough@lsc.edu) (matthew.mccullough@lsc.edu) at 218-733-6943



MINNESOTA STATE

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