

CYBERSECURITY (CERT)

This program was approved for students entering the university in the Summer 2024–Spring 2025 catalog year. For more information about catalog year, go to Catalog Year Information (<http://catalog.louisville.edu/undergraduate/university-wide-unit-specific-policies/catalog-year/>).

Graduate Certificate in Cybersecurity

Unit: Speed School of Engineering (<http://engineering.louisville.edu>) (GS)

Department: Computer Science and Engineering (<https://engineering.louisville.edu/academics/departments/computer/>)
Academic Plan Code(s): NIS_CNSGS, NIS_CNSGSO

Program Information

This program can be completed in a traditional classroom format or entirely online (<http://louisville.edu/online/programs/certificate-programs/graduate-certificate-in-cybersecurity/>).

The graduate certificate in Cybersecurity is designed for advanced computer professionals who wish to strengthen their knowledge and skills in the fast-changing field of cybersecurity, as well as students majoring in disciplines other than Computer Science and Engineering who want to gain knowledge and skills in cybersecurity.

The Cybersecurity graduate certificate program consists of twelve (12) credit hours with two required courses from the Computer Science and Engineering department and two elective courses selected from a list of relevant elective courses in the Computer Science and Engineering department.

As networking technology continues to rapidly advance, so do new and sophisticated threats and attacks to the nation's information infrastructure. The Graduate Certificate in Cybersecurity from the University of Louisville will prepare you to respond to these challenges, training you to monitor and identify cybercriminals.

Admission Requirements

The admission standards for the Graduate Certificate program in Cybersecurity are as follows:

- a. All admission applications for the Graduate Certificate program shall include the following:
 - i. Completed graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>) for the Graduate School,
 - ii. Application fee,
 - iii. Official transcript certifying at least a bachelor's degree. All transcripts not in English must be certified as authentic and translated verbatim into English.
- b. The minimum requirement for admission is the baccalaureate degree or its equivalent from an accredited institution or current enrollment in a graduate Speed School program.
- c. The successful applicant will typically have an undergraduate grade point average of 2.75 or above (on a 4.00 scale).
- d. International students whose primary language is not English must show English language proficiency. Applicants must either submit an official TOEFL, IELTS or Duolingo score or demonstrate a degree award from an acceptable English language institution. The successful applicant will typically have a total TOEFL score of 79,

higher or an overall IELTS score of 6.5 or higher or Duolingo score of 105.

Students enrolling in this graduate certificate program will need to have sufficient background to be successful. Therefore, students must have completed the required course prerequisites, or have equivalent knowledge from courses taken at other universities, or from work experience. Prerequisites include courses (or equivalent) such as CSE 130, CSE 310, and CSE 503.

Students can enroll in a Graduate Certificate program either as a non-degree seeking student or as a student simultaneously enrolled in a graduate degree program and this graduate certificate program. Students who wish to earn a graduate degree must meet all admission criteria for the degree program.

All students enrolled in a graduate certificate program are expected to make steady and satisfactory progress toward the completion of the certificate. Students who are not enrolled for a period of more than 12 months will be considered to have withdrawn from the certificate program. Students who seek to return after such a period of time must contact the graduate program director.

Program Requirements

A total of twelve (12) credit hours are required with two required courses and two elective courses.

| Code | Title | Hours |
|------------------------------|--|-------|
| Required Courses | | |
| CSE 564 or CSE 568 | Introduction to Cryptography Computer Forensics | 3 |
| CSE 566 | Information Security | 3 |
| Select two of the following: | | 6 |
| CSE 546 | Introduction to Machine Learning | |
| CSE 565 | Software Security | |
| CSE 590 | Special Topics in Computer Science and Engineering (Computer and Cyber Security) | |
| CSE 613 | Network Security | |
| CSE 617 | Mobile Computing | |
| CSE 631 | Database Security | |
| CSE 632 | Data Mining | |
| CSE 694 | Special Topics in Computer Science and Engineering | |
| CSE 694 | Special Topics in Computer Science and Engineering (Advanced Cryptography) | |

Minimum Total Hours 12

The Certificate Program of Study must be completed with a 3.00 GPA or better for all graduate courses used to satisfy certificate requirements.

Graduate certificate students must take all certificate course work at the University of Louisville. No transfer credits will be accepted toward a graduate certificate.