COMPUTER SCIENCE CERTIFICATE

This concise, nine-hour certificate program prepares you to enter the computer science field. It also positions you to complete a master's degree in Information Technology or Software Engineering as well. In this program, you will: develop a thorough understanding of the principles of object-orientation, such as abstraction, delegation, inheritance, and polymorphism; learn basic design patterns; and gain programming experience in mainstream object-oriented languages such as C++ and Java.

Related Programs

Major

- Computer Science (BS) (https://catalog.luc.edu/undergraduate/arts-sciences/computer-science/computer-science-bs/)

Certificate

- Cybersecurity Certificate (https://catalog.luc.edu/graduate-professional/business/cybersecurity-certificate/)
- Cybersecurity Technology Management Certificate (https://catalog.luc.edu/undergraduate/continuing-professional-studies/cybersecurity-technology-management-certificate/)

Curriculum

Code	Title	Hours
Certificate Requirements		
COMP 170	Introduction to Object-Oriented Programming	3
COMP 271	Data Structures I	3
Options		
Select a third course from one of the following options:		3
Software Engineering Option		
Students who do well in COMP 271 are encouraged to complete the Software Engineering option and complete:		
COMP 313	Object-Oriented Design	
Information Technology Option		
Completion of a project management course will provide a good transition for students interested in the MS in Information Technology (choose one course):		
CPST 349	Project Management	
COMP 377	IT Project Management	
Web Option		
CPST 342	Introduction to Web Application Development	
Mobile Option		
CPST 343	Software Development for Mobile Devices	
Total Hours		**9**

Suggested Sequence of Courses

The School of Continuing and Professional Studies provides a high-touch advising model in order to incorporate the professional and educational outcomes of the student as well as any transfer credit accepted. In order to provide students with maximum flexibility in their education and because everyone's academic background will vary, advisors will work directly with students to determine an appropriate sequence of courses starting at admission into their respective program based on their needs and expected time to completion.

Learning Outcomes

- Develop programs using fundamental programming constructs, data structures, and algorithms, while demonstrating the ability to choose appropriate solutions and justify their selections.
- Apply object-oriented principles (abstraction, delegation, inheritance, and polymorphism) and design patterns, and demonstrate proficiency in programming, testing, and debugging using a mainstream object-oriented language.