

SOFTWARE DEVELOPMENT, CERTIFICATE OF ACHIEVEMENT

This certificate prepares students with practical skills in computer programming and software development, suitable for entry-level employment in a number of areas where new software is needed. Students master the fundamentals of programming in both structured and object-oriented contexts across several different languages; work with techniques of abstraction, algorithms, and data structures; and develop readable, maintainable, and efficient moderately sized programming solutions. Some students may find this a suitable path to further academic study in Computer Science or Computer Engineering.

Learning Outcomes

Upon successful completion of the program, students will be able to:

- Write programs that use each of the following data structures: arrays, records, strings, linked lists, iterators, stacks, queues, maps and hash tables.
- Write software within an object-oriented design framework, specifying and implementing simple classes.
- Summarize the evolution of programming languages illustrating how this history has led to the paradigms available today.
- Compare and contrast object-oriented analysis and design with structured analysis and design.

Certificate of Achievement Requirements

Code	Title	Units
Required Core		
CSIS 9	Programming Fundamentals: Python	3
CSIS 10A	Programming Methods I: Java	4
CSIS 10B	Programming Methods II: Java	4
CSIS 10C	Programming Methods I.5: C and C++	4
Select one course from the following:		2-3
CSIS 51C	Database Processing	
CSIS 77	Web Design and Publishing	
CSIS 98	Project Development	
Total Units		17-18

Please refer to the graduation requirements section of the Catalog for information about degree and certificate requirements including Reading and Writing, Mathematics, Information Competency, and General Education requirements.