Science, Technology, Engineering, and Mathematics
Career and Academic Pathways (CAPs)
Program Map: Certificate of Achievement for Computer Science Information Technology - Programming

Total number of units: 21 units	Top Code/Academic Plan: 0170.71	Updated on July 17, 2021

Intersession	Course Code	Course	Units	Notes	Advising Notes
Program Course	CIS 101	**Introduction to Computers and Their Uses**	3	Formerly CO SCI 201. Many sections offered every semester including intersessions.	Offered online and face-to-face. No prerequsite. Satisfies G.E. Area D2.
Program Course	CS 111	**Programming in Visual Basic**	3	Formerly CO SCI 208. Offered every spring and fall.	Offered online and face to face. No prerequsites.

Total Units   6

Semester 1	Course Code	Course	Units	Notes	Advising Notes
Program/GE Course	CS 113	**Programming in Java**	3	Formerly CO SCI 290. Offered every spring and fall.	No prerequsites.
Program/GE Course	CS 116	**Programming in C++**	3	Formerly CO SCI 243. Offered every spring and fall. Prerequsite: CIS 101.	

Total Units   6

Semester 2	Course Code	Course	Units	Notes	Advising Notes
Program/GE Course	CIS 120	**Introduction to Databases**	3	Formerly CO SCI 233. Offered every spring and fall. It has CIS 101 prerequisite.	
Program/GE Course	CS 216	**Object-Oriented Programming in C++**	3	Formerly CO SCI 240. Offered every fall. Prerequsite: CS 116 or CS 113.	

Total Units   6

Semester 3	Course Code	Course	Units	Notes	Advising Notes
Program/GE Course	CS 136	**Introduction to Data Structure**	3	Formerly CO SCI 236. Offered every spring. Prerequsite: CS 116 or CS 113.	

Total Units   3

Degree Path and Requirements:

This certificate is achievable in 3 semesters and 1 intersession. The CIS 101 course is also accepted for 3 units from the GE Area D2 (Communication and Analytical Thinking) requirement. Speak to a counselor for details.

Department Advising Notes:

CIS 101 and CS 111 can be taken online.

Program Description

This program enables students to gain much needed programming experience with mainframe computers as well as microcomputers. These experiences will enable students to advance from several entry-level jobs to higher positions in supervision, business management, and systems analysis.

Career and Transfer Opportunities

Employment of software developers is projected to grow 22 percent from 2019 to 2029, much faster than the average for all occupations. Software developers will be needed to respond to an increased demand for computer software. See this website.

Youtube Videos

Why Programming is the Best Job in 2021

Program Map

A suggested sequence of classes to complete a degree, certificate, or program of study. Students should consult an academic counselor for variations to this plan based on part-time or full-time status, transfer plans, pre-requisites needed, etc.

Prerequisite Course

A specific course that must be completed before advancing to the next course.

Check the online catalog at elac.edu for the latest and most accurate information.

Contact
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