CIS---SYSTEMS PROGRAMMING EMPHASIS

Certificate of Achievement
Career/Technical (Major Code: 02099)

Prepares students for employment as entry-level programmers in industry. Emphasizes development of the knowledge and abilities for writing code, optimizing functionality, version control, testing and debugging software. Develops software design, natural problem solving, algorithm development, strong technical, analytical, communication, and organizational skills for industrial, business, and scientific applications. Students who successfully complete this program are eligible for entry-level employment as Entry Level Systems Programmers, Entry Level Systems Integrators, Junior Systems Software Test Engineers, and Entry Level Developers in private industry and local or state government agencies.

Program Student Learning Outcome

- Analyze and report outcomes from Test Report Presentations.

Gainful Employment

The U.S. Department of Education requires colleges to disclose a variety of information for any financial aid eligible program that "prepares students for gainful employment in a recognized occupation."

Students who complete this program will have acquired the necessary analytical tools to successfully secure gainful employment in the field of study.

For more information regarding the data provided for this program and what it means to you as a student, please feel free to visit our SWC Gainful Employment website at: www.swccd.edu/gainfulemployment (http://www.swccd.edu/gainfulemployment/).

Code	Title	Units
Program Requirements [1]		
CIS 106	INTRODUCTION TO PROGRAMMING LOGIC AND DESIGN USING PYTHON	3
CIS 109	LINUX OPERATING SYSTEM AND APACHE WEB SERVER	6
CIS 115	INTRODUCTION TO PROGRAMMING USING C++	4
CIS 117	WINDOWS PROGRAMMING USING VISUAL BASIC	4
CIS 146	INTRODUCTION TO STRUCTURED QUERY LANGUAGE (SQL)	2
CIS 153	PROGRAMMING INTERNET VISUAL/ MOBILE APPLICATIONS USING JAVA	4
CIS 165	JAVASCRIPT PROGRAMMING	3
CIS 182	PYTHON PROGRAMMING FOR SECURITY ANALYSIS AND PENETRATION TESTING	3
Complete Common Core courses for Computer Information Systems		17-19
Total Units		**46-48**

Code	Title	Units
Recommended Electives		
CIS 133	ADVANCED MICROCOMPUTER SPREADSHEETS SOFTWARE	1
CIS 137	ADVANCED WORD PROCESSING SOFTWARE	1
MATH 140	DATA STRUCTURES AND ALGORITHMS	4

Code	Title	Units
Common Core		
BUS 211	COMMUNICATION IN BUSINESS AND INDUSTRY	3
or BUS 212	BUSINESS COMMUNICATION	
CIS/ELEC 10A	MICROCOMPUTER REPAIR AND SERVICE	2
CIS 101	INTRODUCTION TO BUSINESS INFORMATION SYSTEMS	4
CIS 130	MICROCOMPUTER DISK OPERATING SYSTEM	1
CIS 139	WINDOWING ENVIRONMENT	1
CIS 150	INTRODUCTION TO TELECOMMUNICATIONS AND THE INTERNET	1
CIS 226	LINUX AND OPERATING SYSTEMS FUNDAMENTALS	3
Select 2-4 units of the following:		2-4
BUS 290	WORK EXPERIENCE IN BUSINESS I	
BUS 291	WORK EXPERIENCE IN BUSINESS II	
BUS 292	WORK EXPERIENCE IN BUSINESS III	
BUS 293	WORK EXPERIENCE IN BUSINESS IV	
Total Units		**17-19**

[1] Some courses within this program may require additional coursework that must be completed prior to enrollment in these courses. Please consult the individual course listings for prerequisites and any other limitations on enrollment.