

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 |
| Common Core | | |
| BUS 211 or BUS 212 | COMMUNICATION IN BUSINESS AND INDUSTRY BUSINESS COMMUNICATION | 3 |
| 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 | OPERATING SYSTEMS AND COMMAND LANGUAGES | 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.