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## **Computer Information Systems (CIS) - Associate of Arts (AA) Degree**

Major Units: 33                      Total Units: Minimum of 60

(State Code: 02730; TOP Code: 070200; Academic Plan: C002730C)

This sequence of courses prepares students for careers as entry-level programmers using C++, Java, and Visual Basic; database application developers using SQL and PL/SQL; and Web application developers using leading HTML standards, JavaScript, and Python. The program provides a well-rounded education with solid foundations in procedural and object-oriented methodologies, data structures, and computer organization that also helps students pursue a B.S. in a CIS field.

### PROGRAM STUDENT LEARNING OUTCOMES

1. Gain appropriate skills in basic computer literacy, operating systems, and computer applications to enable efficient use and currency with the latest hardware and software.
2. Design and create a relational database using entity-relationship diagrams, normalization, SQL, PL/SQL, and Programming.
3. Design and implement solutions to general purpose and office application problems using advanced programming techniques and languages such as Visual Basic, C++, Java, and Python.
4. Gain skills in the use of client-side web technologies, such as Html and JavaScript, for the design and development of interactive websites.
5. Employ complex data structures and algorithms, including sorting, searching, and recursion, to design and implement solutions to advanced computer science problems.
6. Gain an understanding of computer architecture and organization and apply this understanding to develop low-level code in assembly-language that directly access and control hardware devices, the processor, and memory.

### PROGRAM REQUIREMENTS

Requirements for the Computer Information Systems Associate of Arts degree may be met by completing: (a) 33 units of major core courses with a grade of "C" or better; (b) all general education requirements (English and Math must be completed with a grade of "C" or better); (c) a minimum of 60 degree-applicable units with a cumulative grade point average of 2.0 or higher; and (d) a minimum of 12 units must be taken at LACC.

### MAJOR CORE COURSES (SELECT 33 UNITS)

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CS 101	(formerly CO SCI 103) INTRODUCTION TO COMPUTER SCIENCE	3
CIS 111	(formerly CO SCI 134) SUPPORTING WINDOWS DESKTOPS	3
CS 103	(formerly CO SCI 104) MATHEMATICS FOR PROGRAMMERS	3
CS 102	(formerly CO SCI 107) PROGRAMMING LOGIC AND DESIGN (INTRODUCTION TO PROGRAMMING)	3
CIS 148	(formerly CO SCI 158) INTRODUCTION TO WEB DEVELOPMENT HTML5 & CSS	3
CS 116	(formerly CO SCI 139) PROGRAMMING IN C++.....	3
OR		
CS 113	(formerly CO SCI 141) PROGRAMMING IN JAVA.....	
CIS 219	(formerly CO SCI 186) INTRODUCTION TO ORACLE: SQL AND PL/SQL	3
CS 119	(formerly CO SCI 124) PROGRAMMING IN PYTHON	3
CS 130	(formerly CO SCI 117) INTRODUCTION TO COMPUTER ARCHITECTURE AND ORGANIZATION	3
CS 136	(formerly CO SCI 136) INTRODUCTION TO DATA STRUCTURES	3
CS 216	(formerly CO SCI 140) OBJECT-ORIENTED PROGRAMMING IN C++	3
OR		
CS 213	(formerly CO SCI 142) ADVANCED PROGRAMMING IN JAVA	