# Programming and System Analysis

**Award Type:** Associate in Applied Science  
**Initiating College:** Phoenix College  
**Effective Terms:** 2009 Fall  
**Program Availability:** Shared by: EMCC, GCC, PC, PV, RSC (Mor), SCC  
**Overall G.P.A.:** 2.00  
**Total Credits:** 64-67  
**Major Code:** 3844  
**CIPS Code:** 11.05.01  
**Faculty Initiator:** Cindy Cloud  
**Instructional Council:** Computer Information Systems (12)

District Curriculum Committee Online Agenda Date: 11-24-08 to 11-26-08  
MCCCD Governing Board Approval Date: 12-09-08

**Description:** The Associate in Applied Science (AAS) program provides an in-depth exploration of different computer language and technical skills. The program includes, but is not limited to the following: operating systems, local area networks, business communication, team roles, and dynamics. A Certificate of Completion (CCL) is also available.

**Program Notes:**  
+ indicates course has prerequisite and/or corequisites  
Students must earn a grade of “C” or better for all courses required within the program. Consultation with an Academic Advisor is recommended for course selection.

**Admission Criteria:** None

**Program Prerequisites:** Credits: 3  
+ CRE101 Critical and Evaluative Reading I (3) OR Equivalent by assessment  
Credits: 3

**Required Courses:** Credits: 36-37

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ACC111</td>
<td>Accounting Principles I</td>
<td>3</td>
</tr>
<tr>
<td>CIS105</td>
<td>Survey of Computer Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>BPC/CIS224</td>
<td>Project Management Microsoft Project for Windows</td>
<td>3</td>
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<tr>
<td>CIS126DA</td>
<td>UNIX Operations System (3) OR</td>
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<tr>
<td>CIS126DL</td>
<td>Linux Operating System (3) OR</td>
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<tr>
<td>MST150</td>
<td>Microsoft Windows Professional (3) OR</td>
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<tr>
<td>MST150VI</td>
<td>Microsoft Windows Vista Administration (3) OR</td>
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<tr>
<td>MST150XP</td>
<td>Microsoft Windows XP Professional (3)</td>
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<tr>
<td>+ CIS150</td>
<td>Programming Fundamentals (3) OR</td>
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<tr>
<td>+ CIS150AB</td>
<td>Object-Oriented Programming Fundamentals (3)</td>
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<tr>
<td>+ CIS166</td>
<td>Web Scripting/Programming (3) OR</td>
<td></td>
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<tr>
<td>+ CIS166AA</td>
<td>Introduction to JavaScripting (3) OR</td>
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<tr>
<td>+ CIS166AB</td>
<td>Web Scripting with Perl/CGI (3) OR</td>
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<tr>
<td>+ CIS166AC</td>
<td>Web Scripting with Active Server Pages (ASP).NET (3) OR</td>
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<tr>
<td>+ CIS166AD</td>
<td>Web Scripting with Java Server Pages (JSP) (3) OR</td>
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<tr>
<td>+ CIS166AE</td>
<td>Web Scripting with PHP: Hypertext Preprocessor (PHP) (3) OR</td>
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<tr>
<td>+ CIS166AF</td>
<td>Web Scripting with Python (3)</td>
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</table>

Credits: 36-37
Center for Curriculum & Transfer Articulation
Division of Academic & Student Affairs

CIS190 Introduction to Local Area Networks (3) OR
CNT140 Cisco Networking Basics (4) OR
MST140 Microsoft Networking Essentials (3) 3-4

CIS225 Business Systems Analysis and Design (3) OR
CIS225AB Object-Oriented Analysis and Design (3) OR
CIS250 Management of Information Systems (3) 3

BPC/CIS217AM Advanced Microsoft Access: Database Management (3) OR
CIS119DO Introduction to Oracle: SQL (3) OR
CIS276DA My SQL Database (3) 3

Select 2 courses for a total of 6 credits:

CIS151 Computer Game Development –Level I (3) OR
CIS159 Visual Basic Programming I (3) OR
CIS162 C Programming I (3) OR
CIS162AB C++: Level I (3) OR
CIS162AC Visual C++: Level I (3) OR
CIS162AD C#: Level I (3) OR
CIS163AA Java Programming: Level I (3) 6

GBS233 Business Communication 3

Restricted Electives: Credits: 6

CIS251 Computer Game Development-Level II
CIS259 Visual Basic Programming II
CIS262 C Programming II
CIS262AB C++: Level II
CIS262AC Visual C++: Level II
CIS263AA Java Programming: Level II

Free Electives: None

General Education: Credits: 22-24

CORE: Credits: 12-14

First-Year Composition:
ENG101 First-Year Composition (3) OR
ENG107 First-Year Composition for ESL (3) AND
ENG102 First-Year Composition (3) OR
ENG108 First-Year Composition for ESL (3) 6

Oral Communication:
Any approved general education course in the Oral Communication area. 3

Critical Reading:
Met by CRE101 in Program Prerequisites area. 0

Mathematics:
MAT150 College Algebra/Functions (5) OR
MAT151 College Algebra/Functions (4) OR
MAT152 College Algebra/Functions (3) 3-5

DISTRIBUTION: Credits: 10
Humanities and Fine Arts:
   Any approved general education course in the Humanities and Fine Arts area. 3

Natural Sciences:
   Any approved general education course in the Natural Sciences area. 4

Social and Behavioral Sciences:
   ECN111 Macroeconomic Principles (3) OR
   ECN112 Microeconomic Principles (3) OR
   SBU200 Society and Business (3) 3

Program Competencies

1. Identify, describe, and use the fundamental principles and practices of accounting (ACC111)
2. Identify common uses of computers in business and other sectors of society. (CIS105)
3. Name and explain the steps in the system development process. (CIS105)
4. Describe the components of a Management Information System. (CIS105)
5. Write simple programs in a common programming language using appropriate input, output, and
   processing statements for that language. (CIS105)
6. Identify and define the major components of an operating system, both hardware and software.
   (CIS126D+, MST150++)
7. Design algorithms for simple business problems. (CIS150++)
8. Analyze problem descriptions and design programming solutions to the problems, using common
   problem-solving techniques. (CIS151, CIS159, CIS162++, CIS163AA)
9. Write elementary programs in various programming languages. (CIS151, CIS159, CIS162++, CIS163AA)
10. Using a popular client-side scripting language, write a script that solves a business problem, using syntax
    and structures common to that scripting language. (CIS166, CIS166AA, CIS166AB, CIS166AC,
    CIS166AD, CIS166AE, CIS166AF)
11. Describe the benefits, uses, and problems associated with local area networks. (CIS190, CNT140,
    MST140)
12. Analyze problem descriptions and design programming solution to the problems using common problem-
    solving techniques. (CIS224)
13. Describe the integrated workings of systems and subsystems within a business organization. (CIS225++,
    CIS250)
14. Set up, maintain, and use a database management program. (BPC/CIS217AM, CIS119DO, CIS276DA)
15. Identify ways of processing messages and evaluating their success. (GBS233)
16. Write coherent sentences and paragraphs using fundamental writing techniques. (GBS233)
17. Describe the process of sending and receiving professional quality electronic mail. (GBS233)
18. Describe the common uses of visual aids to convert quantitative and qualitative data into meaningful
    summaries. (GBS233)