CIS 110

Introduction to Computer Information Systems

Approved: May 6, 2011

EFFECTIVE DATE: Fall 2011
Team Leader and Members: Matt Butcher, Andra Goldberg, Dave White, Steve Sorden

Date of proposal to Curriculum Sub-committee: 05/06/11

Purpose: ___New  _X_Change  __ Retire

If this is a change, what is being changed? (Check ALL that apply)
___  Update Prefix  __ Course Description
___  Title  __ Course Number
___  Learning Units  _X_ Textbook
___  Competencies  __ Credits
___  Format Change  __ Prerequisite

Effective Semester/Year: Fall 2011  Spring 20___  Summer 20____

COURSE INFORMATION

Prefix & Number: CIS 110
Title: Introduction to Computer Information Systems

Catalog Course Description:
An introduction to hardware, software, data structures, information systems analysis and other topics regarding computer information systems. Content covers historical and contemporary topics with emphasis on database and spreadsheet packages for problem solving from a business perspective.

Credit Hours: 3
Lecture Hours: 3  Lab Hours: 0

Modality:
Online: _X_  On-Ground: _X_

Prerequisite(s): Appropriate score on assessment test or successful completion of PCS 021 and TRE 089.

Co-requisite(s): 

Does this course need a separately scheduled lab component? ___ Yes  _X_ No

Effective Semester: _X_ Fall 2011  _X_ Spring 2011  __ Summer 20____

Does this course need additional fees attached? If so, please explain. No

Is there a similar course in the college bank? ___ Yes  _X_ No  If yes, identify:

Articulation: Is this course or an equivalent offered at other two- and four- year universities in AZ? X Yes  _X_ No  If yes, identify the college, subject, prefix, number, and title:
ASU: CIS 105, CSE 180, EDT 180, Computer/Stats (CS)
Writing Across the Curriculum Rationale:
Mohave Community College firmly supports the idea that writing can be used to improve education; students who write in their respective content areas will learn more and retain what they learn better than those who don’t. Courses in the core curriculum have been identified as “Writing Across the Curriculum” courses.

Suggested minimum standards for the Writing Across the Curriculum component are as follows:
1. The writing assignments should total 1500 – 2000 words. For example, a single report which is 1500 words in length could fulfill the requirement, or a series of essay questions and short papers (example: four -375 word assignments) which total 1500 words could meet the requirement.
2. The writing component will represent at least 10% of a student’s final grade in the course.

Is this a course identified as a Writing Across the Curriculum course?  X  Yes    __  No

Intended Course Goals

By the end of the semester, students will be able to:

1. Analyze the principal concepts and roles of mainframe, mini and personal computers and programming in a business environment.

2. Analyze information management and information systems development and define information systems analysis, design, and database management.

3. Identify various computer hardware components and the appropriate use and purpose of software applications including operating systems, word processing, graphic presentation, spreadsheets, and databases.

4. Complete problem solving projects in spreadsheet and database software applications by using formulas, functions, queries and sorting procedures. Complete a writing assignment in a word processing program which includes formatting styles, tables, headers, and footers.

5. Compare common network topologies, classifications, connection options, and media for speed, costs, and security features.

6. Identify security protocols necessary to protect information from viruses and malware such as firewalls, anti-virus software, and system updates.

7. Use Internet browsers and search engines efficiently to find information and define basic website terms, domains, and protocols.

Course Competencies and Objectives
Course competencies are statements that clearly express what students will be able to do as a result of the course. Use specific measurable action verbs to express the performance expected.
### By the end of the semester, students will be able to:

<table>
<thead>
<tr>
<th>Competency 1</th>
<th>Identify the main concepts of computers and how they are used in business organizations to solve problems and automate tasks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective 1.1</td>
<td>Define computer terminology, including hardware, software, data processing, input/output, storage, communications, networks</td>
</tr>
<tr>
<td>Objective 1.2</td>
<td>Use features of standard applications packages (word processing, database, and spreadsheets) to produce documents, spreadsheets, and database projects.</td>
</tr>
<tr>
<td>Objective 1.3</td>
<td>Define the roles of operating systems functions and the relationship between the operating systems and hardware compatibility</td>
</tr>
<tr>
<td>Objective 1.4</td>
<td>Define the rights granted by copyright law to use software and the comparison of shareware, freeware, public domain, and commercial licenses</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Competency 2</th>
<th>Utilize file management procedures to organize and secure data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective 2.1</td>
<td>Define viruses and describe how anti-virus software detects and eliminates viruses</td>
</tr>
<tr>
<td>Objective 2.2</td>
<td>Use risk management techniques to prevent data loss and destruction through back-up procedures and security policies</td>
</tr>
<tr>
<td>Objective 2.3</td>
<td>Sort and organize files into appropriate folders</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Competency 3</th>
<th>Utilize web and Internet resources for research and information dissemination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective 3.1</td>
<td>Use web browsers and search engines to research a topic using search parameters to narrow topic listings</td>
</tr>
<tr>
<td>Objective 3.2</td>
<td>Send and receive e-mail with attachments following appropriate etiquette for corresponding electronically</td>
</tr>
<tr>
<td>Objective 3.3</td>
<td>Print, copy, and save search sites in various formats including html, rtf, and picture formats</td>
</tr>
<tr>
<td>Objective 3.4</td>
<td>List various digital media formats and their application to web based communication and correspondence including jpg, gif, wav, and video files.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Competency 4</th>
<th>Use word processing to create a business document</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective 4.1</td>
<td>Insert and format a table into a document using Table Styles</td>
</tr>
<tr>
<td>Objective 4.2</td>
<td>Modify font, paragraph, and page formats using styles</td>
</tr>
<tr>
<td>Objective 4.3</td>
<td>Describe the purpose of a footnotes and endnotes how its creation is automated using word processing tools</td>
</tr>
<tr>
<td>Objective 4.4</td>
<td>Create custom headers and footers which include automated page numbering formats</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Competency 5</th>
<th>Define key components and terms regarding information management and information systems development including data file structure and data management concepts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective 5.1</td>
<td>Define the roles of information systems in professional and/or business use</td>
</tr>
<tr>
<td>Objective 5.2</td>
<td>Define the terms direct conversion, parallel conversion, phased conversion, and pilot conversion and the advantages and disadvantages of each conversion method</td>
</tr>
<tr>
<td>Objective 5.3</td>
<td>Define transaction processing systems, management information systems, and decision support systems</td>
</tr>
</tbody>
</table>

| Competency 6 | Utilize database concepts and terminology |

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### Objective 6.1
Demonstrate and discuss data file structure and data management

### Objective 6.2
Create and link database tables and perform basic data queries

### Objective 6.3
Define the properties of hierarchical, network, relational and object-oriented databases

### Objective 6.4
Create a report that adds grouping levels using the Report Wizard and be able to print and view this report in the Design and Print Preview

### Objective 6.5
Use queries to find records in a table and define SQL (Standard Query Language) and its use in Access query development

### Objective 6.6
Describe the appropriate use of filters to display data and sort data in a table with one or more fields

### Objective 6.7
List the advantages and reasons to use a database over a spreadsheet when managing data

### Competency 7
Create spreadsheets for solving business problems

#### Objective 7.1
Identify worksheet components

#### Objective 7.2
Create a spreadsheet that calculates totals, averages, and IF functions and define and use relative and absolute references when copying cell formulas

#### Objective 7.3
Split and freeze labels in a spreadsheet to aid in viewing large projects and explain why it is important to protect areas of the spreadsheet from changes

#### Objective 7.4
Apply borders and number formatting to spreadsheet data and list the reasons for conditional formatting to highlight data in a spreadsheet

#### Objective 7.5
Sort and filter data in a spreadsheet using multiple data fields

#### Objective 7.6
Describe the use of Excel templates to create custom amortization tables, invoices, budgets, and expense reports.

#### Objective 7.7
Create and modify charts including pie, line, and column charts and graphs.

### Competency 8
Examine program development and programming languages

#### Objective 8.1
Define basic program structure and content

#### Objective 8.2
Define program development including planning, coding, and testing options

#### Objective 8.3
Define algorithms and their use in procedural programming

#### Objective 8.4
Use a Visual Basic VDE (Visual Development Environment) to modify, save, and test a program

### Competency 9
Define key developments in the history of computer devices

#### Objective 9.1
Define the life cycle of typical hardware and software products

#### Objective 9.2
Differentiate between computer engineering, computer science, and information systems positions in the industry

#### Objective 9.3
Define prototypes and how this term is used in computer development

### Competency 10
Define Information Systems and their role in organizations

#### Objective 10.1
Define and compare the different conversion methods used in upgrading hardware and software

#### Objective 10.2
Contrast and compare the characteristics of transaction processing, management information, and decision support systems

#### Objective 10.3
Describe information system data vulnerabilities such as natural disasters, hardware breakdowns, security breaches, and viruses and how to plan and protect information from these types of events, attacks or failures.

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**Teach Teach Teach Teacher's Guide**

**Course Textbook, Materials and Equipment**

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| Textbook(s) | Title | New Perspectives on Computer Concepts 2012 or most recent edition  
Edition: 14th  
Copyright: 01/15/2011 |
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td></td>
<td>Author(s)</td>
<td>Parsons, June Jamrich</td>
</tr>
<tr>
<td></td>
<td>Publisher:</td>
<td>Cengage</td>
</tr>
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</table>
|             | ISBN10: | 1111529078  
ISBN13: 9781111529079 |

<table>
<thead>
<tr>
<th>Title</th>
<th>Practical Microsoft Office 2010, 1st Edition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Author(s)</td>
<td>June Jamrich Parsons Dan Oja</td>
</tr>
<tr>
<td>Publisher</td>
<td>Cengage</td>
</tr>
</tbody>
</table>
ISBN13: 9780538745956 |

<table>
<thead>
<tr>
<th>Software/Equipment</th>
<th>Windows XP, Vista, or 7 and Office 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook Costs</td>
<td>Please indicate how much the textbook would cost if purchased through Barnes &amp; Noble: Approximate price: Bundle of both books - $175.00</td>
</tr>
</tbody>
</table>

**Course Assessments**

<table>
<thead>
<tr>
<th>Description of Possible Course Assessments (Essays, multiple choice, etc.)</th>
<th>Quizzes and final exam, writing assignment, projects in word processing, spreadsheets, database, and programming</th>
</tr>
</thead>
</table>

Exams standardized for this course?  
__ Midterm  
_X_ Final  
__ Other (Please specify):  
Are exams required by the department?  
_X_ Yes  
_ ___No  
If Yes, please specify:  
Common 50 question MC Final Exam  
Where can faculty members locate or access the required standardized exams for this course? (Contact Person and Location)  
Example: NCK – Academic Chair Office  
From BHC or NCK CTE Coordinators  

**Student Outcomes:** Identify the general education goals for student learning that is a component of this course.  
Check all that apply:  

1. Communicate effectively.  
   a. Read and comprehend at a college level.  
   b. Write effectively in a college setting.  
2. Demonstrate effective quantitative reasoning and problem solving skills.  
3. Demonstrate effective qualitative reasoning skills.  

**Method of Assessment**  
Writing project (described below). Reading that is assessed through chapter quizzes and completed projects.  
Create formulas to calculate results to solve sample problems in spreadsheet projects.  
Analyze the principal concepts and roles of mainframe, mini and microcomputers. List the steps in program development and.
4. Apply effective methods of inquiry.
   a. Generate research paper by gathering information from varied sources, analyzing data and organizing information into a coherent structure. ☒
   b. Employ the scientific method. ☐
   Writing project involves research in comparing different computer systems and analyzing which one is the best choice given the student's needs and budget constraints

5. Demonstrate sensitivity to diversity
   a. Experience the creative products of humanity. ☐
   b. Describe alternate historical, cultural, global perspectives. ☐

### Learning Units
A learning unit is a set of teaching activities and study materials that focuses on a topic and is used to meet the competencies and objectives intended for that topic.

#### Learning Unit Topic 1: Computer, Internet, Web, and E-mail Basics

**Competency: 1 & 3**

**Objectives: 1.1, 3.1, 3.2, & 3.3**

**Activities/Assignments:**
Define and give examples of personal computers, mainframes, minicomputers, and supercomputers; send and receive e-mail with attachments; use the Internet to search for topics of student interest, describe netiquette and e-mail emoticons; e-mail assignment using attachments, quiz on unit.

#### Learning Unit Topic 2: Computer Hardware

**Competency: 1**

**Objectives: 1.1**

**Activities/Assignments:**
Write a comparison of two computer systems identifying memory, storage, CPU types and mhz, and monitor resolutions (Writing Across Curriculum Requirement); in class - display different storage devices and the advantages and disadvantages the device, i.e. diskettes, CD-R and CD-RWs, Zip Disks, and USB Flash drives; quiz on unit.

#### Learning Unit Topic 3: Computer Software

**Competency: 1 & 4**
### Objectives: 1.2, 1.3 & 1.4

**Activities/Assignments:**

Demonstrate different operating systems including command driven and graphical user interface systems (GUI). Ask students for their experiences with different versions of Windows. Word processing and spreadsheet projects, quiz on unit.

### Learning Unit Topic 4: File Management - Virus Protection, and Backup

**Competency:** 2

**Objectives:** 2.1, 2.2, & 2.3

**Activities/Assignments:**

Display various web sites that sell virus protection software and discuss the difference between hoaxes and actual virus threats; identify and define different types of viruses - worms, trojans, macro, and boot sector viruses; quiz on unit.

### Learning Unit Topic 5: Internet and LAN Technology and digital media

**Competency:** 3

**Objectives:** 3.1, 3.3 & 3.4

**Activities/Assignments:**

Complete an Internet Scavenger Hunt for students to search various sites for their names and topics of interest, observe what other people are searching for, bulletin board postings, and acronyms used in computer jargon; Demonstrate animated gifs, use the Sound application in the control panel, search for videos, sounds, and pictures and copy and paste these files into PowerPoint slides, demonstrate a digital camera and allow students to take pictures and paste into documents, discuss file formats of each type of media. quiz on unit.

### Learning Unit Topic 6: Web Pages, Web Sites, and E-commerce

**Competency:** 3

**Objectives:** 3.1 & 3.3

**Activities/Assignments:**

Internet search using different search engines. View searches by others on DogPile, demonstrate html coding using Microsoft Word and save as web page, discuss on-line auction sites and payment methods such as PayPal, quiz on unit.
<table>
<thead>
<tr>
<th>Learning Unit Topic 7: Word Processing for business applications</th>
</tr>
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<tbody>
<tr>
<td>Competency: 4</td>
</tr>
<tr>
<td>Objectives: 4.1, 4.2, 4.3, &amp; 4.4</td>
</tr>
<tr>
<td>Activities/Assignments:</td>
</tr>
<tr>
<td>Assign projects that use Word to format documents, create tables, and use styles. Discuss the importance of headers and footers and how they save time by not having to insert these items on every page. Use spellcheck to show how not all incorrect words are found – such as for and fro – these are both valid words and would not be caught with normal spellcheck – proof reading is still required. Use copy and paste to save time and insure accuracy when working with text, tables, or numbers between spreadsheets and documents – or when creating PowerPoint slides. quiz on unit.</td>
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<table>
<thead>
<tr>
<th>Learning Unit Topic 8: Spreadsheets for business problem solving</th>
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<tbody>
<tr>
<td>Competency: 7</td>
</tr>
<tr>
<td>Objectives: 7.1, 7.2, 7.3, 7.4, 7.5, 7.6, &amp; 7.7</td>
</tr>
<tr>
<td>Activities/Assignments:</td>
</tr>
<tr>
<td>Assign projects in Excel that use the SUM, IF, AVERAGE, MIN, and MAX functions using both absolute and relative references in the formula arguments. Create charts that can be modified as to the type and add various styles for emphasis of the data. Demonstrate pivot tables and pivot charts and their use in business decisions. Using a large spreadsheet, sort data and demonstrate freezing the titles both vertically and horizontally when navigating a large spreadsheet.</td>
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<table>
<thead>
<tr>
<th>Learning Unit Topic 9: The Computer Industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competency: 9</td>
</tr>
<tr>
<td>Objectives: 9.1, 9.2, &amp; 9.3</td>
</tr>
<tr>
<td>Activities/Assignments:</td>
</tr>
<tr>
<td>Search Department of Labor sites describing the outlook for jobs in the computer industry, discuss the history of computer development and typical life cycles for hardware and software, display the Mohave CIS AAS and certificate programs and discuss the CIS emphasis versus Computer Engineering at Universities, quiz on unit.</td>
</tr>
</tbody>
</table>
### Competency: 10

**Objectives:** 10.1, 10.2, & 10.3

**Activities/Assignments:**

Using case projects, discuss and "solve" information system challenges in an organization. Discuss the benefits and drawbacks of direct conversion, have students share personal experiences of hardware and software upgrades and the problems and challenges they have had, quiz on unit.

<table>
<thead>
<tr>
<th>Learning Unit Topic 11: Databases</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Competency:</strong> 6</td>
</tr>
<tr>
<td><strong>Objectives:</strong> 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, &amp; 6.7</td>
</tr>
</tbody>
</table>

**Activities/Assignments:**

Ask students how many databases they are in – college, IRS, health insurance, Social Security, DMV, etc. Complete projects using Access performing queries and sorting of data, creating forms and reports, demonstrate the relationships between tables and the importance of being in the correct view – design versus table or print preview – when working with this database. Discuss the different database models and their evolution and use in organizations, quiz on unit.

<table>
<thead>
<tr>
<th>Learning Unit Topic 12: Computer Programming</th>
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<tbody>
<tr>
<td><strong>Competency:</strong> 8</td>
</tr>
<tr>
<td><strong>Objectives:</strong> 8.1, 8.2, 8.3, &amp; 8.4</td>
</tr>
</tbody>
</table>

**Activities/Assignments:**

Group programming project developing a simple math game or use the project that compares different pizza projects available in the textbook, discuss various programming languages, demonstrate Visual Basic macro development in Excel and/or Access, quiz on unit.

<table>
<thead>
<tr>
<th>Learning Unit Topic 12: Information Management and Systems Development</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Competency:</strong> 5</td>
</tr>
<tr>
<td><strong>Objectives:</strong> 5.1, 5.2, 5.3</td>
</tr>
</tbody>
</table>

**Activities/Assignments:**

Using the college’s registration process as an example, illustrate on the board the various
entities and complexity of this process in an information system diagram. Have students discuss the online registration process and what is needed from the various database files to complete a registration process, quiz on unit.

CIS 110 Intro to Computer Information Systems is part of the General Education Core of courses and requires a writing assignment. Suggestions and ideas for this assignment include: Compare Two Computer Systems – memory, storage, peripherals, CPU, etc. and the advantages and disadvantages of purchasing either system; a resume and cover letter produced using the templates in a word-processing program; the history of computer development; your ideal “dream” computer and why this machine would best fit your use; copyright issues in current software distributions; and/or personal privacy and the Internet – how has personal information on the Internet changed the way you disseminate information about yourself? This assignment requires correct grammar and footnotes or endnotes of sources used in the assignment.