Course Outline

COURSE: CSIS 78  DIVISION: 50  ALSO LISTED AS:

TERM EFFECTIVE: Spring 2015  CURRICULUM APPROVAL DATE: 11/24/2014

SHORT TITLE: WEBSITES SQL/PHP

LONG TITLE: Web Sites with SQL and PHP

<table>
<thead>
<tr>
<th>Units</th>
<th>Number of Weeks</th>
<th>Type</th>
<th>Contact Hours/Week</th>
<th>Total Contact Hours</th>
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<tr>
<td>4</td>
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<td>Lecture</td>
<td>3</td>
<td>54</td>
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<td></td>
<td></td>
<td>Lab</td>
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<td>Other</td>
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<tr>
<td></td>
<td></td>
<td>Total</td>
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COURSE DESCRIPTION:

Covers the programming of database-driven, web-based applications (such as an eCommerce web site) using PHP and MySQL. PHP is a powerful language for writing server-side Web applications. MySQL is the world's most popular open source database. Together these two technologies provide a powerful platform for building database-driven Web applications. This course has the option of a letter grade or pass/no pass.

ADVISORY: CSIS 128 Database - Access, or equivalent database experience.

PREREQUISITES:

COREQUISITES:

CREDIT STATUS: D - Credit - Degree Applicable

GRADING MODES

  L - Standard Letter Grade
  P - Pass/No Pass

REPEATABILITY: N - Course may not be repeated

SCHEDULE TYPES:

  02 - Lecture and/or discussion
  03 - Lecture/Laboratory
  04 - Laboratory/Studio/Activity
  05 - Hybrid
  72 - Dist. Ed Internet Delayed
STUDENT LEARNING OUTCOMES:
1. Create, modify, and use SQL databases.
   Measure: homework, projects, exams, quizzes
   PLO: 1,2
   ILO: 3,7,2,1
   GE-LO:
   Year assessed or anticipated year of assessment: 2010-11

2. Use PHP to interface SQL databases with Web Pages.
   Measure: homework, projects, exams, quizzes
   PLO: 1,2
   ILO: 7,2,3
   GE-LO:
   Year assessed or anticipated year of assessment: 2010-11

   Measure: homework, projects, exams, quizzes
   PLO: 1
   ILO: 7,2,3
   GE-LO:
   Year assessed or anticipated year of assessment: 2010-11

4. Demonstrate appropriate use of specialized features of PHP that pertain to databases: user input validation, security, and database integrity.
   Measure: homework, projects, exams, quizzes
   PLO: 1,2
   ILO: 7,3,2,1
   GE-LO:
   Year assessed or anticipated year of assessment: 2010-11

PROGRAM LEARNING OUTCOMES:
After completing an A.S. Degree or Certificate of Achievement in CSIS: Computer Programming, a student will be able to: (1) create programs in three different languages that use control flow statements such as if and switch statements and (2) create programs in three different languages that use loop statements such as for and while statements.

CONTENT, STUDENT PERFORMANCE OBJECTIVES, OUT-OF-CLASS ASSIGNMENTS
Curriculum Approval Date: 11/24/2014
6 Hours
Chapter 1, Database Applications and the Web
Discuss the three-tier architecture commonly used in web database applications, and how data is exchanged between browsers and servers. It introduces PHP and MySQL, and discusses when and why databases are used on the Web. This subject will be covered through class lecture and textbook reading assignments. Students will complete programming assignments that demonstrate their comprehension.
6 Hours
Chapter 2, The PHP Scripting Language
Introduces the PHP scripting language. It covers programming in PHP
and discusses the basic programming constructs, variables, types, functions, and techniques. This subject will be covered through class lecture and textbook reading assignments. Students will complete a project that demonstrates their comprehension. Students will complete programming assignments that demonstrate their comprehension.

6 Hours
Chapter 3, Arrays, Strings, and Advanced Data Manipulation in PHP
Explains the intermediate level features of PHP, including how to work with arrays, strings, and times and dates. The chapter is illustrated with many short examples that show how each technique is used in practice. This subject will be covered through class lecture and textbook reading assignments. Students will complete a programming project that demonstrates their comprehension.

6 Hours
Chapter 4, Introduction to Object-Oriented Programming with PHP
How to use the basic object-oriented features of PHP, and explains why object-oriented programming is popular and becoming important in PHP. This subject will be covered through class lecture and textbook reading assignments. Students will complete a programming project that demonstrates their comprehension.

6 Hours
Chapter 5, SQL and MySQL
Introduces MySQL and how to interact with it using the SQL query language. The focus is an example-driven section on querying. The basics of creating, deleting, and updating data and databases are introduced. This subject will be covered through class lecture and textbook reading assignments. Students will complete a project that demonstrates their comprehension.

12 Hours
Chapter 6, Querying Web Databases
Introduces connecting to MySQL with PHP. Explains the querying process used in most interactions with MySQL and presents examples that use the PHP MySQL library functions. Shows how user data is encoded, requests sent in from a web browser to a web server and decoded for processing in PHP. We discuss the security implications in processing user data and show steps to secure interactive querying systems. Our discussions are supported by short examples that show how to build simple query modules. This subject will be covered through class lecture and textbook reading assignments. Students will complete a database project that demonstrates their comprehension.

6 Hours
Chapter 7, PEAR
Discusses the PEAR package repository. Packages are source code modules that can be used in code and saves the programmer from reinventing widely used concepts. PEAR includes over 100 packages for tasks as diverse as date and time manipulation, security, networking, and database access, and this chapter shows how to install and upgrade them. The chapter focuses on a templates package - a useful tool for
separating HTML from code - and another for database abstraction. Both packages are used in later chapters to develop robust, reusable code. This subject will be covered through class lecture and textbook reading assignments. Students will complete a database project that demonstrates their comprehension.

12 Hours
Chapter 8, Writing to Web Databases
Covers writing data to web databases. Reloading or printing a page from a web browser can cause data to be written to a database more than once. Multiple users accessing the same database introduces other problems, such as data unexpectedly being changed by one user while it's being read by another. We discuss how to solve problems related to the nature of the Web and multiple users. We illustrate the principles with a case study example of collecting form data from a user and saving it in a database. This subject will be covered through class lecture and textbook reading assignments. Students will complete a database project that demonstrates their comprehension.

6 Hours
Chapter 9, Validation
Presents the principles and techniques for user input validation. We show techniques such as how to validate dates, credit card numbers, and phone numbers, and explain how to use these in error-checking modules that are scalable and practical for web database applications. This subject will be covered through class lecture and textbook reading assignments. Students will complete a programming project that demonstrates their comprehension.

6 Hours
Chapter 10, Sessions
Covers the principles of adding session management to web database applications. Session management allows the interactions between a user and the application to be related so that, for example, a user can log in and log out of an application and be guided through a series of steps in a process. We show how PHP manages sessions and illustrate the techniques with a case study of managing error feedback to users. We also discuss when and when not to use sessions, and how to configure PHP's session handler so it's secure and scalable. This subject will be covered through class lecture and textbook reading assignments. Students will complete a database and programming project that demonstrates their comprehension.

6 Hours
Chapter 11, Authentication and Security
Discusses web security and authentication. We show how PHP can be used for basic authentication, how databases can be used to manage users, and why you might need to secure communications with the secure sockets layer (SSL). The case study is a reusable authentication module with login, logout, and password change features. This subject will be covered through class lecture and textbook reading assignments. Students will complete a database and programming project that
demonstrates their comprehension.

6 Hours
Chapter 12, Errors, Debugging, and Deployment
Error handling and debugging are the focus of this chapter. We discuss the types of errors that can occur in PHP and show how to identify the source of common programming errors that cause these problems. We then show you how to write your own error handler that can be integrated into an application, and how to trigger your own errors when you need them. Adding a custom error handler gives a professional finish to an application. This subject will be covered through class lecture and textbook reading assignments. Students will complete a programming project that demonstrates their comprehension.

6 Hours
Chapter 13, Reporting
Discusses reporting for the Web and what solutions work in PHP. The focus is producing PDF (Adobe Portable Document Format) reports using a popular PHP PDF library, and we illustrate the techniques with several examples. The chapter concludes with a function reference for the class we use. This subject will be covered through class lecture and textbook reading assignments. Students will complete a programming project that demonstrates their comprehension.

6 Hours
Chapter 14, Advanced Features of Object-Oriented Programming in PHP
This chapter shows the advanced features of PHP's object-oriented programming model. We extend the discussion of Chapter 4, and show how to build and reuse classes, and how to write powerful object-oriented applications. The chapter concludes with a case study that shows how all the features can be used together to build a complex and powerful class hierarchy. This subject will be covered through class lecture and textbook reading assignments. Students will complete a programming project that demonstrates their comprehension.

6 Hours
Chapter 15, Advanced SQL
This chapter shows the advanced features of MySQL. It extends the discussion of Chapter 5, and shows how to write complex queries, manipulate data in complex ways, manage users, and tune your database and MySQL. This subject will be covered through class lecture and textbook reading assignments. Students will complete a database project that demonstrates their comprehension.

2 Hours
Final
ASSIGNMENTS:
See Content.

METHODS OF INSTRUCTION:
Lecture, computer demonstration, database examples.

METHODS OF EVALUATION:
Category 1 - The types of writing assignments required:
Percent range of total grade: 20 % to 60 %
Other: Programming projects

Category 2 - The problem-solving assignments required:
Percent range of total grade: 20 % to 60 %
Homework Problems
Quizzes
Exams

Category 3 - The types of skill demonstrations required:
Percent range of total grade: 20 % to 60 %
Performance Exams

Category 4 - The types of objective examinations used in the course:
Percent range of total grade: 20 % to 60 %
Multiple Choice
True/False
Matching Items
Completion

REPRESENTATIVE TEXTBOOKS:
Required:
ISBN: 978-0-9871530-8-1
Reading level of text, Grade: 12th Verified by: MS Word

ARTICULATION and CERTIFICATE INFORMATION
Associate Degree:
CSU GE:
IGETC:
CSU TRANSFER:
    Transferable CSU, effective 200630
UC TRANSFER:
    Not Transferable

SUPPLEMENTAL DATA:
Basic Skills: N
Classification: I
Noncredit Category: Y
Cooperative Education:
Program Status: 1 Program Applicable
Special Class Status: N
CAN:
CAN Sequence:
CSU Crosswalk Course Department: CSIS
CSU Crosswalk Course Number: 78
Prior to College Level: Y
Non Credit Enhanced Funding: N
Funding Agency Code: Y
In-Service: N
Occupational Course: C
Maximum Hours:
Minimum Hours:
Course Control Number: CCC000086567
Sports/Physical Education Course: N
Taxonomy of Program: 070710