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| **Course Acronym:** | CSCI |
| **Course Number:** | 12 |
| **Descriptive Title:** | Programming for Internet Applications Using PHP, JavaScript, and HTML |
| **Division:** | Mathematical Sciences |
| **Department:** | Computer Science |
| **Course Disciplines:** | Computer Science |
| **Catalog Description:** | In this introductory Internet programming course, students learn the fundamentals of Internet programming with JavaScript and Hypertext Preprocessor (PHP), a widely used, open source, general-purpose server-side programming language. Students design and write applications that extend web servers. These applications use backend databases to process data submitted through web forms and provide access to dynamically generated web pages with the retrieved data from the database. |
| **Prerequisite:** | Computer Science 1 or Computer Information Systems 16 or Computer Information Systems 134 with a minimum grade of C in prerequisite or equivalent |
| **Co-requisite:** | |
| **Recommended Preparation:** | Mastery of a programming language and using computer software. |
| **Enrollment Limitation:** | |
| **Hours Lecture (per week):** | 4 |
| **Hours Laboratory (per week):** | 3 |
| **Outside Study Hours:** | 8 |
| **Total Course Hours:** | 126 |
| **Course Units:** | 5 |
| **Grading Method:** | Letter Grade only |
| **Credit Status:** | Credit, degree applicable |
| **Transfer CSU:** | Yes |
| **Effective Date:** | 4/16/2012 |
| **Transfer UC:** | No |
| **Effective Date:** | |
| **General Education: ECC** | |
| **Term:** | |
| **Other:** | |
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| **Term:** | |
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| **IGETC:** | |
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| **Other:** | |
| **Student Learning Outcomes:** | **SLO #1 Static Interactive Web Pages**<br>Design and implement an interactive web page.<br><br>**SLO #2 Server-Side Scripts**<br>Develop a client-side script to create a drop down menu for a web page.<br><br>**SLO #3 Dynamic Web Pages Date and Time Using Scripting Languages**<br>Design and implement a program or function to verify data collected from a web form and preparing them for server side processing.<br><br>**SLO #4 Processing Web Data**<br>Design and implement a server-side program or function to a database and interact (insert, delete, update records) with it. |
| **Course Objectives:** | 1. Design interactive web pages.<br>2. Write JavaScript client-side scripts.<br>3. Write PHP server-side scripts.<br>4. Process data from online forms.<br>5. Define and use cookies, redirection, applications, and sessions.<br>6. Demonstrate basic server-side database access using PHP programs. |
| **Major Topics:** | **I. Interactive Web Pages (11 hours, lecture)**<br><br>1. Design<br><br>1. CSS Style<br>2. HTML Content<br><br>B. HTML and CSS<br><br>1. Tags<br>2. Usage<br><br>**II. Labs for Interactive Web Pages (8 hours, lab)**<br><br>1. HTML and CSS<br>1. Tags<br>2. Usage<br><br>**III. JavaScript (12 hour, lecture)**<br><br>1.<br>1. Scripting<br>2. JavaScript syntax<br>3. JavaScript logic |

4. jQuery

**IV. Labs for JavaScript (7 hours, lab)**

1. Scripting
2. JavaScript syntax and logic

1. String processing

3. Decision making

1. If, if else, switch

4. Loops
5. Functions
6. Regular expressions
7. System classes
8. Dynamic web pages using jQuery

**V. PHP: Hypertext Preprocessor Language Basics (20 hours, lecture)**

1. Data types
2. Input and Output
3. Data manipulation
4. Control statements
5. Files
6. Functions

**VI. Labs for PHP : Hypertext Preprocessor Language Basics (12 hour, lab)**

1. Input and Output
2. Conditions to validate user input
3. Functions
4. Files

**VII. Storing and Retrieving Data (6 hours, lecture)**

1. PHP variables
2. Input process

1. Data from keyboard
2. Data from files
3. Data from forms

**VIII. Labs for Storing and Retrieving Data (3 hours, lab)**

1. Input process
    1.
        1. Data from keyboard
        2. Data from files
        3. Data from forms

**IX. Large Amounts of Data (6 hours, lecture)**

1. Arrays
2. Storing data into arrays
3. Processing arrays

**X. Labs for Large Amounts of Data (4 hours, lab)**

1. One-dimensional arrays
2. Joining arrays
3. Splitting strings

**XI. Strings (3 hours, lecture)**

1. Object String in PHP
2. Regular expressions in PHP

**XII. Labs for Strings (3 hours, lab)**

1. Data from online forms using strings
2. Regular expressions to verify data
3. Return results to the user online

**XIII. Databases (5 hours, lecture)**

1. Database concepts
2. Server-side databases

**XIV. Labs for Databases (7 hours, lab)**

1. Server-side databases
2. PHP programs to set up and access web databases
3. PHP programs to query databases

**XV. Script Implementation (3 hours, lecture)**

1. Redirection
2. Applications
3. Sessions

**XVI. Lab for Implementation Script (3 hours, lab)**

1. Redirection
2. Applications

3. Sessions

**XVII. Site Implementation (6 hours, lecture)**

1. Finalize design
2. Test components
3. Integrate components

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| | 4. Testing final product<br><br>**XVIII. Lab for Site Implementation (7 hours, lab)**<br><br>1. Validation<br>2. Debugging<br>3. Test with multiple browsers |
| **Total Lecture Hours:** | 72 |
| **Total Laboratory Hours:** | 54 |
| **Total Hours:** | 126 |
| **Primary Method of Evaluation:** | 2) Problem solving demonstrations (computational or non-computational) |
| **Typical Assignment Using Primary Method of Evaluation:** | Develop a website using PHP programming and other tools to have the features listed below.<br><br>1. Maintain a list of user accounts.<br><br>a. Users may log on or log off, and many features are available only to users who are logged on.<br><br>b. Each user has a login name and a human name. The login name must contain only letters and digits. The user logs in by entering the login name.<br><br>c. Anyone may create an account. The creator must choose a login name and provide a human name. If the chosen login name contains illegal characters, or already exists, refuse to create the account and give reasonable feedback to the user.<br><br>2. Implement account password; allow the user to set a password when the account is created, and to change it later. Require a correct password for login.<br><br>3. Maintain a list of items for bidding.<br><br>a. Each item is an auction. It has an owner, a closing date, and a collection of bids.<br><br>b. Any logged-in user may add an item. Require the user to enter a description and closing date, and set the list of bids initially empty.<br><br>c. Any logged-in user may delete any of his own items; an item may be deleted only by its owner.<br><br>d. Present a list of items currently available. For each one, show the owner, description, closing date, number of bids and high bid (if any).<br><br>4. Maintain a list of bids for each item in the item list.<br><br>a. Any logged-in user may bid on any item which has not closed.<br><br>b. The bid must be an integer amount and must exceed the current high bid, if there is one. |

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| | c. When a bid is submitted, you must check that it meets all requirements. If not, generate an appropriate message and do not record the bid.<br><br>d. Each allowed bid creates a record containing the bidder, the amount of the bid, and the date and time the bid was submitted.<br><br>e. Anyone may display the list of bids for any item. This listing shows the bidder, amount and date for each bid, in chronological order.<br><br>f. An item's list of bids is deleted when the item is deleted.<br><br>5. Any data entered by a user which is sent back in HTML, such as item descriptions, must be escaped so that it displays literally. This is both an appearance and a security issue.<br><br>6. Be sure that your program cannot be broken or compromised by mal-formed input data. Generally, you will need to check that input is what it should be (integers are integers), or at least be sure the consequences of bad data are minor. |
| **Critical Thinking Assignment 1:** | Create a web page to use a PHP program, which prints the current time in various formats and colors depending on the query string. Your PHP program is intended to interpret a simple query string, which controls how the time is displayed, and load the page title with correct background and text colors. The query string has three fields separated by colons. The first is the time format, the second is the text color and the third is the background color. |
| **Critical Thinking Assignment 2:** | Write a PHP program to produce an on-line hangman game. The game chooses a word of at least five characters at random, and the player tries to figure out what word has been chosen by guessing letters. The player must find the word with no more than six incorrect guesses. |
| **Other Evaluation Methods:** | Homework Problems, Objective Exam, Final Project completion and presentation |
| **Instructional Methods:** | Demonstration, Lab, Lecture, Multimedia presentations |
| **If other:** | |
| **Work Outside of Class:** | Other (specify), Problem solving activity, Required reading, Skill practice, Web page/site development |
| **If Other:** | Write computer programs |
| **Up-To-Date Representative Textbooks:** | zyBooks.com: Programming for Internet Applications Using PHP, JavaScript and HTML, 2022 |
| **Alternative Textbooks:** | |
| **Required Supplementary Readings:** | https://www.amazon.com/Foundation-Website-Creation<br><br>https://**www**.best10ecommercesitebuilders.**com**/best/**website**-**builder** |
| **Other Required Materials:** | |
| **Requisite:** | |
| **Category:** | |

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| **Requisite course(s): List both prerequisites and corequisites in this box.** | Computer Science 1 OR, Computer Information Systems 16, OR Computer Information Systems 134 |
| **Requisite and Matching skill(s):Bold the requisite skill. List the corresponding course objective under each skill(s).** | **Proficiency in a high level programming language such as C#, Java, C/C++, or Visual Basic and familiarity with Windows operating system.**<br><br>CSCI 1 -Design, implement and manipulate string class data types as objects in order to store string type data.<br><br>CSCI 1 -Represent data utilizing simple numeric and character data types in a program and use them with input-output processes of the particular implementation of C++ being used.<br><br>CSCI 1 -Design programming solutions requiring decision-making, using appropriate C++ selection statements, such as if-then, if-then-else and switch.<br><br>CIS 16 - Choose an appropriate data structure for modeling a simple problem.<br><br>CIS 16 -Identify basic programming concepts<br><br>CIS 134 -Examine web architecture and the Microsoft.NET Framework<br><br>CIS 134 -Appraise the role of the web page to e-Business and the Internet.<br><br>CIS 134 -Utilize dynamic client- and server-side website programming tools, languages, and technologies such as Visual Studio.NET, ASP.NET, C#, HTML (Hypertext Markup Language), CSS (Cascading Style Sheets), and XML (Extensible Markup Language). |
| **Requisite Skill:** | Or Equivalent Experience |
| **Requisite Skill and Matching Skill(s): Bold the requisite skill(s). If applicable** | The student will be exempted from the prerequisite if she/he can demonstrate sufficient programming knowledge in a high level programming language (such as C/C++, C#, Visual Basic, Java, PHP,... ) through work portfolio or oral and/or written examination by the department of computer science faculty. |
| **Requisite course:** | |
| **Requisite and Matching skill(s):Bold the requisite skill. List the corresponding course objective under each skill(s).** | |
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| **course objective under each skill(s). If applicable** | |
| **Enrollment Limitations and Category:** | |
| **Enrollment Limitations Impact:** | |
| **Course Created by:** | Massoud Ghyam |
| **Date:** | 11/02/2010 |
| **Original Board Approval Date:** | 04/16/2012 |
| **Last Reviewed and/or Revised by:** | Massoud Ghyam |
| **Date:** | 10/13/2022 |
| **Last Board Approval Date:** | |