CS 55.13 Course Outline as of Fall 2018

CATALOG INFORMATION

Dept and Nbr: CS 55.13 Title: SERVER-SIDE WEB DEV

Full Title: Server-Side Web Development

Last Reviewed: 10/24/2022

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	3.00	Lecture Scheduled	3.00	17.5	Lecture Scheduled	52.50
Minimum	3.00	Lab Scheduled	0	6	Lab Scheduled	0
		Contact DHR	0		Contact DHR	0
		Contact Total	3.00		Contact Total	52.50
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 105.00 Total Student Learning Hours: 157.50

Title 5 Category: AA Degree Applicable

Grading: Grade or P/NP

Repeatability: 00 - Two Repeats if Grade was D, F, NC, or NP

Also Listed As:

Formerly: CIS 58.41

Catalog Description:

This is an introduction to server-side Web development using open source technologies as well as a comprehensive course in the server-side scripting languages such as PHP hypertext preprocessor scripting language. The course covers writing server-side scripts for the Web, such as PHP, procedural and object-oriented programming, Web form management, an introduction to SQL statements and databases. Advanced topics are covered including dynamic generation of content using databases, sessions, cookies, Web services, e-commerce, and authentication. Previous programming experience recommended.

Prerequisites/Corequisites:

Course Completion of CS 50A

Recommended Preparation:

Eligibility for ENGL 100 or ESL 100; AND Completion of CS 10A

Limits on Enrollment:

Schedule of Classes Information:

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Recommended: Eligibility for ENGL 100 or ESL 100; AND Completion of CS 10A

Limits on Enrollment: Transfer Credit: CSU;

Repeatability: Two Repeats if Grade was D, F, NC, or NP

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree: Area Effective: Inactive: CSU GE: Transfer Area Effective: Inactive:

IGETC: Transfer Area Effective: Inactive:

CSU Transfer: Transferable Effective: Fall 2002 Inactive:

UC Transfer: Effective: Inactive:

CID:

Certificate/Major Applicable:

Both Certificate and Major Applicable

COURSE CONTENT

Student Learning Outcomes:

At the conclusion of this course, the student should be able to:

- 1. Design server-side solutions to support validation, authentication, business logic, and security.
- 2. Develop server-side scripts employing SQL databases to create robust data-driven Web applications.

Objectives:

Upon completion of the course, students will be able to:

- 1. Develop server-side scripts for publishing on the Web.
- 2. Employ control structures, functions, arrays and hashes to create robust applications.
- 3. Design rigorous code for validation and authentication with attention to security and performance.
- 4. Write SQL commands and use a database to develop data-driven Web applications.
- 5. Create an advanced project using server-side scripts and databases.

Topics and Scope:

- I. Introduction
 - A. History of PHP
 - B. Limitations of Server-Side Programming
 - C. Dynamic Web Pages
 - D. PHP and HTML

E. Web Servers and Server-Side Programming
F. PHP and Databases
G. UNIX/Linux Environment
H. Business Logic

- II. Data and Operations
 - A. Data Types (No Explicit Type Declarations)
 - B. Variables
 - C. Constants
 - D. Operators
 - E. Expressions
 - F. Operator Precedence
- III. Conditional Statements and Control Structures
- IV. Functions
 - A. Scope
 - B. Static Variables
 - C. Arguments
 - D. Recursion
 - E. Dynamic Function Calls
 - F. Exception Handling
- V. Arrays and Hashes
 - A. Single-Dimensional Arrays
 - B. Indexing Arrays
 - C. Initializing Arrays
 - D. Multi-Dimensional Arrays
 - E. Casting Arrays
 - F. Hashes
- VI. Classes and Objects
 - A. Defining a Class
 - B. Constructors
 - C. Accessing Properties and Methods
 - D. Static Class Members
 - E. Access Types
 - F. Binding
- VII. Input/Output and Disk Access
 - A. HTTP Connections: Requests
 - B. Writing to the Browser: Responses
 - C. Request Methods
 - 1. GET Method
 - 2. POST Method
 - D. Passing Arrays in Forms
 - E. Cookies
 - F. File Uploads
 - G. Reading/Writing to Files
 - H. Sessions
- VIII. SQL Databases
 - A. Introduction to SQL Databases and SQL Syntax
 - B. Designing and Creating a Database with Tables in SQL
 - C. SQL Data Types
 - D. SQL Metadata
 - E. Inserting Values into a SQL Table
 - F. Retrieving Data from a SQL Table
 - G. Deleting Data from a SQL Table

- IX. Creating Dynamic Content with Server-Side Script and SQL
 - A. Connecting to SQL
 - B. Extracting Data Using server-side script
 - C. Populating Form Menus Using Data from SQL
 - D. Putting Returned Records into a Table
 - E. Authentication with server-side script
 - 1. Using Sessions
 - 2. Using HTTP Header Authentication
- X. Advanced Topics
 - A. Web Services
 - B. Authentication
 - C. E-Commerce
 - D. Other Server-Side Languages

Assignment:

- 1. Read approximately 25-30 pages a week from course textbook and/or instructor-provided reading materials, accompanied by self-test questions and running code examples
- 2. Create and complete programming solutions (12 16)
- 3. Regular participation in online discussion forums (6 14)
- 4. Define and create a final Web application project that utilizes client- and server-side development to output dynamic content and process client input
- 5. Quizzes (2 4), midterm, and final exam

Methods of Evaluation/Basis of Grade:

Writing: Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

Final project proposal, discussion posts

Writing 10 - 20%

Problem Solving: Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Programming solutions

Problem solving 10 - 40%

Skill Demonstrations: All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

Final Application

Skill Demonstrations 20 - 50%

Exams: All forms of formal testing, other than skill performance exams.

Quizzes, midterm, and final exam

Exams 10 - 20%

Other: Includes any assessment tools that do not logically fit into the above categories.

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Other Category 0 - 10%

Representative Textbooks and Materials:

PHP and MySQL for Dynamic Web Sites: Visual QuickPro Guide. 5th ed. Ullman, Larry. Peachpit Press. 2017

PHP and MySQL Web Development. 5th ed. Welling, Luke and Thompson. Laura. Addison-Wesley Professional. 2016

Murach's PHP & MySQL. 2nd ed. Murach, Joel and Harris, Ray. Murach & Associates. 2014