

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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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. (Grade or P/NP)

Prerequisites/Corequisites: Course Completion of CS 50A

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.

Attendance and participation

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