

## Course Title: PHP Web Development Syllabus

**Course Description:** This course is designed to provide students with a comprehensive understanding of PHP programming for web development. Students will learn how to create dynamic and interactive websites by integrating PHP with HTML, CSS, JavaScript, and MySQL. The course covers essential PHP concepts, database integration, session management, security considerations, and best practices in web development.

**Prerequisites:** Basic knowledge of HTML, CSS, and JavaScript is recommended. Prior experience with programming concepts would be beneficial but not mandatory.

### Course Objectives:

1. Understand the fundamentals of PHP programming language.
2. Learn how to build dynamic web applications using PHP.
3. Gain proficiency in integrating PHP with HTML, CSS, and JavaScript.
4. Develop skills in interacting with databases using MySQL and PHP.
5. Explore advanced topics such as session management, authentication, and security in PHP applications.

### Course Outline:

#### 1. Introduction to PHP

- History and evolution of PHP
- Setting up PHP development environment
- Writing and running PHP scripts
- PHP syntax and basic constructs

#### 2. PHP Variables and Data Types

- Scalar, compound, and special data types
- Variable declaration and assignment
- Type conversion and type juggling

#### 3. Control Structures in PHP

- Conditional statements (if-else, switch)
- Looping structures (for, while, do-while)
- Break and continue statements

#### 4. PHP Functions

- Defining and invoking functions
- Passing arguments to functions
- Returning values from functions
- Variable scope and global keyword

#### 5. Arrays and Array Functions

- Creating and manipulating arrays

- Array functions for sorting, searching, and manipulation
- Associative arrays and multidimensional arrays

#### 6. **PHP Forms and Form Handling**

- Creating HTML forms
- Handling form data using PHP
- Form validation and error handling
- Sanitizing user input

#### 7. **Working with Databases (MySQL)**

- Introduction to relational databases
- MySQL database setup and configuration
- Performing CRUD operations using PHP and MySQL
- Database abstraction with PDO (PHP Data Objects)

#### 8. **Session Management and Cookies**

- Using sessions to maintain state
- Setting and retrieving cookies
- Session security considerations
- Implementing login/logout functionality

#### 9. **Object-Oriented PHP**

- Classes, objects, and properties
- Methods and visibility modifiers
- Constructors and destructors
- Inheritance, polymorphism, and interfaces

#### 10. **File Handling and Manipulation**

- Reading from and writing to files
- File upload and handling file uploads
- Directory operations and file system functions

#### 11. **Security Best Practices in PHP**

- SQL injection prevention
- Cross-Site Scripting (XSS) prevention
- Data validation and sanitization
- Secure password hashing and authentication

#### 12. **Introduction to PHP Frameworks (Optional)**

- Overview of popular PHP frameworks such as Laravel, Symfony, CodeIgniter, etc.
- Advantages of using frameworks for web development
- Basic concepts and features of a chosen framework

#### **Assessment:**

- Weekly assignments to reinforce learning concepts.
- Midterm exam covering topics covered in the first half of the course.
- Final project requiring students to develop a dynamic web application using PHP and MySQL.

**Textbook:** "PHP and MySQL Web Development" by Luke Welling and Laura Thomson

**Additional Resources:**

- Online tutorials and documentation (PHP official documentation).
- Supplemental readings and materials provided by the instructor.

**Grading:**

- Assignments: 30%
- Midterm Exam: 20%
- Final Project: 40%
- Participation and Attendance: 10%

**Attendance Policy:** Regular attendance is expected. Students are allowed a maximum of three unexcused absences. Excessive absences may result in a reduction of the final grade.

**Office Hours:** Instructor office hours will be held twice a week for additional help and clarification.

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