

PHP SYLLABUS**✓ Module 1: Introduction to PHP**

- What is PHP? History & Features
- Installation & Setup (XAMPP, WAMP, LAMP)
- PHP Syntax & Basic Structure
- Writing First PHP Script (.php file)
- Embedding PHP in HTML
- Running PHP on Localhost

✓ Module 2: PHP Basics

- Variables & Constants
- Data Types (String, Integer, Float, Boolean, Array, Object)
- Operators in PHP (Arithmetic, Comparison, Logical, Assignment)
- Type Juggling & Type Casting
- Comments in PHP

✓ Module 3: Control Structures

- Conditional Statements (if, else, switch)
- Looping (for, while, do-while, foreach)
- Nested Loops
- Break & Continue Statements

✓ Module 4: PHP Arrays

- Indexed Arrays
- Associative Arrays
- Multidimensional Arrays, for each loop
- Array Functions (array_push(), array_merge(), array_keys(), sort(), etc.)

✓ Module 5: Functions in PHP

- Defining Functions & Function Scope
- Function Parameters & Return Values
- Default & Variable-Length Arguments
- Recursive Functions
- Anonymous & Arrow Functions
- Built-in PHP Functions (String, Math, Date, File, Array Functions)

✓ Module 6: Working with Strings

- String Manipulation Functions (strlen(), str_replace(), strpos(), substr(), strtolower(), etc.)
- String Formatting (printf(), sprintf())

- Regular Expressions (preg_match(), preg_replace(), preg_split())

✓ Module 7: Handling Forms in PHP

- Working with HTML Forms (GET vs POST)
- Handling Form Input
- Form Validation (Required Fields, Email Validation, Number Validation)
- Handling File Uploads (move_uploaded_file())

✓ Module 8: Superglobals in PHP

- \$_GET, \$_POST, \$_REQUEST
- \$_SESSION, \$_COOKIE
- \$_FILES for File Uploads
- \$_SERVER for Server Information
- \$_ENV & \$_GLOBALS

✓ Module 9: PHP and MySQL Database

- Introduction to MySQL & PHPMyAdmin
- Connecting PHP to MySQL (mysqli vs PDO)
- Performing CRUD Operations (SELECT, INSERT, UPDATE, DELETE)
- Prepared Statements (Security Against SQL Injection)
- Fetching Data (fetch_assoc(), fetch_array())
- Transactions & Error Handling

✦ Final Project: Full-Stack Web Application

✓ **Develop a Complete Web Application** using HTML, CSS, JavaScript, PHP & MySQL

✓ **User Authentication System:**

- **User Registration** (with email verification)
- **User Login** (with password encryption using PHP password_hash)
- **Password Reset** (via email verification)
- **User Sessions** (secure login persistence using PHP sessions)

Check duplicate users in **MySQL database** before registration

✓ **User Roles & Dashboard:**

✓ **Session Management:**

- Implement **secure login session** (destroy session after inactivity)
- Logout mechanism with session destruction

ADVANCED PHP SYLLABUS**✓ Module 10: Advanced Database Handling**

- Using PDO (PHP Data Objects) for Database Connections
- Joins (INNER JOIN, LEFT JOIN, RIGHT JOIN)
- Database Indexing for Optimization
- Stored Procedures in MySQL
- Using JSON Data with MySQL

✓ Module 11: PHP Sessions & Cookies

- Creating & Using Sessions (session_start(), \$_SESSION) / Managing User Sessions
- Using Cookies (setcookie(), \$_COOKIE)
- Session Expiry & Security

✓ Module 12: File Handling in PHP

- Reading & Writing Files (fopen(), fwrite(), fread(), fclose())
- File Permissions & File Handling Modes
- Handling CSV Files
- Working with JSON Files (json_encode(), json_decode())

✓ Module 13: Object-Oriented Programming (OOP) in PHP

- Classes & Objects / Constructors & Destructors
- Inheritance (extends)
- Access Modifiers (public, private, protected)
- Static Methods & Properties
- Abstract Classes & Interfaces / Traits in PHP
- Method Overriding & Magic Methods (__construct(), __get(), __set())

✓ Module 14: Error Handling & Exception Handling

- Types of Errors (Warnings, Notices, Fatal Errors)
- Using try-catch Blocks for Exception Handling
- Custom Exception Handling
- Logging Errors / Debugging Techniques

✓ Module 15: Security in PHP

- **Preventing SQL Injection** (Using Prepared Statements)
- **Cross-Site Scripting (XSS) Protection** (htmlspecialchars(), strip_tags())

- **Cross-Site Request Forgery (CSRF) Protection**
- **Password Hashing** (password_hash(), password_verify())
- **Using HTTP Headers for Security** (Content-Security-Policy, X-Frame-Options)

✓ Module 16: PHP & AJAX

- Introduction to AJAX
- Handling AJAX Requests with PHP (XMLHttpRequest, fetch())
- JSON Responses & API Handling

✓ Module 17: RESTful APIs in PHP

- Introduction to REST APIs
- Creating RESTful APIs using PHP & MySQL
- Handling API Requests (GET, POST, PUT, DELETE)
- JSON Response Handling
- API Authentication with JWT (JSON Web Token)

✓ Module 18: PHP Frameworks

- Introduction to PHP Frameworks
- **Laravel (Latest Version)**
 - Routing & Middleware / Blade Templates
 - Database Migration & Eloquent ORM
 - Authentication & Authorization
 - API Development in Laravel
- **CodeIgniter Basics**
- **Symfony Basics**

✓ Module 19: PHP & Cloud Technologies

- Deploying PHP Applications on Cloud (AWS, DigitalOcean, Linode)
- Using Docker for PHP Development
- Serverless PHP with Firebase & AWS Lambda

✓ Module 20: PHP & Modern Web Development

- Introduction to PHP with **React.js & Vue.js** (For Full Stack Development)
- PHP with **WebSockets** (For Real-time Applications)
- PHP with **GraphQL** (Modern API Development)

✦ Industry-Specific PHP Best Practices

- ✓ Writing **secure & optimized** PHP code.
- ✓ Using **MVC architecture** for structured projects
- ✓ Project Work