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PHP Syllabus (Hinglish)

Module 1: Introduction to PHP

1. PHP Introduction
- PHP kya hai?
- PHP ka use kahan hota hai?
- Web development mein PHP ka role
- PHP Installation (XAMPP / WAMP / MAMP setup)

2. Basic Syntax and Structure
- PHP tags (`<?php ?>`)
- PHP comments (`//`, `/* */`)
- Basic structure: Variables, Data Types (String, Integer, Float, Boolean, Array)
- Echo vs Print
- PHP Statements, Semicolons, Line breaks

Module 2: Variables and Operators

1. Variables
- Variables ka declaration (`$variable_name`)
- Variable types: Local, Global, Superglobals
- Constants in PHP (`define()`, `const`)

2. Operators
- Arithmetic Operators (`+, -, *, /, %`)
- Assignment Operators (`=, +=, -=, *=`)
- Comparison Operators (`==, !=, >, <, >=, <=`)
- Logical Operators (`&&, ||, !`)

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- Increment/Decrement Operators (`++`, `--`)

Module 3: Control Structures

1. Conditional Statements
- `if`, `else`, `elseif`, `switch`
- Ternary Operator (`?:`)

2. Loops
- `for`, `while`, `do-while`
- `foreach` loop (especially for arrays)

3. Break, Continue, and Exit
- Use of `break`, `continue`, `exit()`, and `die()`

Module 4: Functions

1. Defining Functions
- Function syntax: `function name() { }`
- Function with arguments and return values
- Default Parameters

2. Built-in Functions
- String Functions (`strlen()`, `substr()`, `str_replace()`)
- Array Functions (`count()`, `array_push()`, `array_merge()`)
- Date and Time Functions (`date()`, `time()`, `strtotime()`)

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Module 5: Arrays

1. Indexed Arrays
  - Indexed array ka creation aur use
  - Traversing through loops (e.g., `foreach`)
2. Associative Arrays
  - Creating key-value pairs
  - Accessing values with keys
3. Multi-dimensional Arrays
  - Creating multi-dimensional arrays
  - Nested loops to access values

Module 6: Working with Forms and User Input

1. Form Handling in PHP
  - GET vs POST methods
  - Form validation
  - `$_GET`, `$_POST`, `$_REQUEST` superglobal arrays
  - Sanitizing user input
2. File Uploads
  - File upload forms
  - Handling file uploads in PHP (`$_FILES`)

Module 7: Working with Databases (MySQL)

1. Introduction to MySQL
  - MySQL database setup

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- Connecting to a database with PHP (`mysqli_connect()`)

2. CRUD Operations

- Create, Read, Update, Delete (CRUD)
- Writing SQL queries in PHP
- `INSERT INTO`, `SELECT`, `UPDATE`, `DELETE`

3. Prepared Statements

- Preventing SQL Injection
- Using `prepared` statements for security

Module 8: Advanced PHP Topics

1. Sessions and Cookies

- Difference between sessions and cookies
- Creating and managing sessions (`session_start()`)
- Working with cookies (`setcookie()`)

2. Object-Oriented Programming (OOP) in PHP

- Classes and Objects
- Constructor and Destructor methods
- Inheritance, Polymorphism, and Encapsulation
- Visibility (public, private, protected)
- Static methods and properties

Module 9: Error Handling and Debugging

1. Error Types in PHP

- Notices, Warnings, and Errors

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- o Handling errors with `try-catch`
- o Custom error handling (`set_error_handler()`)

2. Debugging Techniques
- o Using `var_dump()` and `print_r()`
- o Enabling error reporting (`error_reporting(E_ALL)`)

Module 10: PHP Security Best Practices

1. Data Sanitization and Validation
- o `htmlspecialchars()`, `strip_tags()`, `filter_var()`
- o Validating email, URL, and other data

2. Password Hashing
- o Using `password_hash()` and `password_verify()`

3. Cross-Site Scripting (XSS) and Cross-Site Request Forgery (CSRF) Prevention
- o Basic XSS and CSRF attacks
- o Mitigating attacks in PHP

Module 11: PHP Frameworks Overview

1. Introduction to MVC Architecture
- o MVC pattern: Model, View, Controller
- o Advantages of MVC

2. Introduction to PHP Frameworks
- o Laravel, CodeIgniter, Symfony, Yii

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o Basic understanding of how frameworks make development faster and easier

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Module 12: Project Development

1. Developing a Simple Web Application

o Planning and designing a project
o Creating a basic user authentication system (Login/Register)
o Connecting PHP with MySQL for data storage

Final Project

- Build a complete dynamic website or web application using PHP and MySQL

Additional Resources

- **PHP Documentation:** PHP Manual
- **Online PHP Compiler:** PHP Fiddle
- **PHP Tutorials:** W3Schools, TutorialsPoint