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|-----------------------|--------------------------|
| <b>COURSE TITLE</b>   | <b>WEB TECHNOLOGY-II</b> |
| <b>COURSE CODE</b>    | <b>05CA0402</b>          |
| <b>COURSE CREDITS</b> | <b>4</b>                 |

**Objective:**

- 1 Understand the concepts of back-end programming and its integration with databases.
- 2 Apply techniques to connect front-end and back-end components to develop functional web applications
- 3 Demonstrate the ability to manage application state and enhance user experience through dynamic interactions.

**Course Outcomes:** After completion of this course, student will be able to:

- 1 Describe the fundamental concepts of back-end programming using PHP
- 2 Apply array structures and looping constructs to solve programming problems in PHP
- 3 Implement user state management using sessions and cookies in a web application
- 4 Develop a dynamic and interactive website with integrated database functionality

**Pre-requisite of course:**NA

**Teaching and Examination Scheme**

| <b>Theory Hours</b> | <b>Tutorial Hours</b> | <b>Practical Hours</b> | <b>ESE</b> | <b>IA</b> | <b>CSE</b> | <b>Viva</b> | <b>Term Work</b> |
|---------------------|-----------------------|------------------------|------------|-----------|------------|-------------|------------------|
| 3                   | 0                     | 2                      | 50         | 30        | 20         | 25          | 25               |

| <b>Contents : Unit</b> | <b>Topics</b>   | <b>Contact Hours</b> |
|------------------------|---|----------------------|
| 1                      | <b>INTRODUCTION TO PHP</b><br>Installation of PHP, understanding of Syntax, Variables, Echo / Print, PHP Data Types, Strings, and Constants, PHP Operators, Handling HTML Form With PHP, PHP Form Validation, Required, URL/Email, Form Complete, Making Decisions, Doing Repetitive task with looping, Mixing Decisions and looping with HTML, PHP If...Else...Elseif, Switch, While Loops, For Loops  | 10                   |
| 2                      | <b>FUNCTIONS</b><br>Understanding of a function, defining a function, Call by value and Call by reference, Recursive function, String, Creating and accessing String, Searching & Replacing String, viii. Formatting String, String Related Library functions, Array, Anatomy of an Array, Creating index-based and Associative array, Accessing array Element, Looping with Index-based array, Looping with associative array using each() and foreach() | 10                   |

| Contents :<br>Unit | Topics   | Contact Hours |
|--------------------|--|---------------|
| 3                  | <b>STATE MANAGEMENT</b><br>Using query string (URL rewriting), Using Hidden field, using cookies, using session, String Matching with Regular Expression, What is regular expression, Pattern matching in PHP, replacing text, Splitting a string with a Regular xpression | 15            |
| 4                  | <b>DATABASE CONNECTIVITY WITH MYSQL</b><br>Connection with MySQL Database, performing basic database operation (DML) (Insert, Delete, Update, Select), Setting query parameter, Make a login System  | 10            |
| <b>Total Hours</b> |  | <b>45</b>     |

### Suggested List of Experiments:

| Contents :<br>Unit | Topics  | Contact Hours |
|--------------------|---|---------------|
| 1                  | <b>Unit 1</b><br>Install PHP and XAMPP/WAMP and write a simple PHP script, Create a PHP script that demonstrates variables, echo/print, and data types, Develop a PHP form with validation (Required fields, Email, and URL validation), Implement decision-making structures (if...else, switch) in PHP, Write a script to demonstrate loops (for, while, do...while) with HTML output | 15            |
| 2                  | <b>Unit 2</b><br>Define and call a PHP function, demonstrating call by value and call by reference. Implement a recursive function for factorial calculation, Perform string operations: Searching, replacing, and formatting a string, Create an associative array and iterate over it using foreach(), Implement an index-based array and sort it in ascending/descending order       | 15            |
| 3                  | <b>Unit 3</b><br>Implement URL rewriting using query strings to pass data between pages, Create a PHP form with hidden fields to store temporary user data, Develop a login system using sessions and cookies, Use regular expressions to validate email and phone numbers, Create a script that splits a string using a regular expression   | 15            |
| 4                  | <b>Unit 4</b><br>Establish a connection to a MySQL database using PHP, Create a database and table for user details using PHP and MySQL, Implement basic CRUD operations (INSERT, UPDATE, DELETE, SELECT), Develop a dynamic user login system using MySQL database, Create a registration form with database storage and validation  | 15            |
| <b>Total Hours</b> |   | <b>60</b>     |

### Textbook :

- 1 Learning PHP, MySQL & JavaScript, Robin Nixon, O'Reilly Media, 2021

**Textbook :**

- 2 PHP and MySQL Web Development, Luke Welling, Laura Thomson, Pearson Education, 2017

**References:**

- 1 Web Technologies: HTML, JavaScript, PHP, Java, JSP, ASP.NET, Web Technologies: HTML, JavaScript, PHP, Java, JSP, ASP.NET, Uttam K. Roy, Oxford University Press, 2010
- 2 Core PHP Programming, Core PHP Programming, Leon Atkinson, Pearson Education, 2004

**Suggested Theory Distribution:**

The suggested theory distribution as per Bloom’s taxonomy is as follows. This distribution serves as guidelines for teachers and students to achieve effective teaching-learning process

| Distribution of Theory for course delivery |            |       |         |          |                                  |
|--|------------|-------|---------|----------|----------------------------------|
| Remember / Knowledge                       | Understand | Apply | Analyze | Evaluate | Higher order Thinking / Creative |
| 20.00                                      | 30.00      | 25.00 | 15.00   | 10.00    | 0.00                             |

**Instructional Method:**

- 1 Board Work
- 2 PPT
- 3 Demo

**Supplementary Resources:**

- 1 <https://www.w3schools.com/php/>
- 2 <https://www.php.net/docs.php>
- 3 <https://www.php.net/manual/en/book.mysqli.php>
- 4 <https://dev.mysql.com/doc/>
- 5 <https://leetcode.com/problemset/database/>
- 6 <https://getbootstrap.com/docs/5.3/getting-started/introduction/>
- 7 <https://www.apachefriends.org/index.html>