



Subject : Web Application Development Using PHP - MCAXX11501

Type of course: Skill Enhancement Courses (SEC)

Prerequisite: Knowledge about HTML, CSS, JavaScript

Rationale:

In our day-to-day lives, we use a number of web applications, such as online ticket or hotel booking, e-commerce, social networks, email etc... All of these web applications are stored on a remote server, delivered over the Internet and accessed through a browser interface. PHP is an open-source, server-side scripting language designed specifically for web applications. PHP is one of the most popular choices among developers to develop dynamic, interactive, secure and database-driven web applications.

In the growing field of web technologies, it is essential for diploma-passing students to learn the PHP language to help them build web applications. The goal of this course is to develop web development skills in students using the server-side scripting language -PHP. Students will earn the integration of HTML, CSS, PHP and MySQL database to develop web applications.

Teaching and Examination Scheme:

| Teaching Scheme | | | Credits C | Examination Marks | | | | | Total Marks |
|-----------------|---|---|--------------|-------------------|-----|-----------------|----|-----|-------------|
| CI | T | P | | Theory Marks | | Practical Marks | | CA | |
| | | | | ESE | MSE | V | P | ALA | |
| 0 | 1 | 4 | 3 | 0 | 0 | 10 | 40 | 50 | 100 |

Legends: CI-ClassRoom Instructions; T – Tutorial; P - Practical; C – Credit; ESE - End Semester Examination; MSE- Mid Semester Examination; V – Viva; CA - Continuous Assessment; ALA- Active Learning Activities.

Continuous Assessment :

| Sr. No. | Active Learning Activities | Marks |
|---------|---|-------|
| 1 | Lab Manual : Prepare a journal of practical & Lab Manual and upload it on Moodle. | 10 |
| 2 | Revealing the Output : Students will be assigned a pseudo code. They have to analyze the code & get the output and upload it on the Moodle. | 10 |



| | | |
|-------|---|----|
| 3 | Online quiz : Online Quiz of PHP concepts on Moodle platform. | 10 |
| 4 | Bug Detectives : Students will be assigned a code containing intentional errors, students need to identify errors, correct and upload on Moodle.(group of Four) | 10 |
| 5 | Building a Project: build a dynamic website using PHP in group of four students. | 10 |
| Total | | 50 |

Course Content:

| Sr. No. | Course content | Hrs | % Weightage |
|---------|---|-----|-------------|
| 1 | <p>Introduction to PHP</p> <ul style="list-style-type: none"> • Introduction to different kinds of Languages • Introduction to PHP for Web Development, History and future scope of PHP, state the relationship between PHP, My SQL and Apache • Installation of Important tools for Working in PHP like WAMP, XAMPP. • PHP file Structure and Syntax of PHP, PHP variable and its data types, type casting, constant and magic constants • PHP operators and their precedence • Control Statements-If Statement, If.....Else Statement, If...If Else Statement, Nested If Statement, Switch Statement • Looping Statements- For Loop, While Loop, Do...While Loop. Foreach Loop | 12 | 20 |
| 2 | <p>Array and Function</p> <ul style="list-style-type: none"> • What is an Array, Types of Array-Numeric array and associated array and Multi-dimensional Arrays • What is a function?, Types of Function, return statement, How to call a function, Function without parameters, Function with parameters, Static Variable, Difference between Call By Value and Call By Reference, • Built in function: string function: Chr, ord, strtolower, strlen, strtoupper, ltrim, rtrim, trim, substr, strcmp, strcasecmp, strpos, strrpos, strstr, strev, str_replace, echo, print Math functions: Abs, ceil, floor, round, fmod, min, max, pow, sqrt, rand Array Function: Count, list, in_array, current, next, previous, | 12 | 20 |



| | | | |
|---|--|----|----|
| | end, each, array_merge, array_reverse, sort Variable Function: get type, set type, isset File Function: Fopen, fread, fwrite, fclose | | |
| 3 | <p>Object Oriented concepts in PHP</p> <ul style="list-style-type: none"> • OOP concepts: Class, Object, Properties, Methods, Encapsulation, Access modifiers • Creating Classes, Object • Constructor and Destructors • Inheritance • Polymorphism : Overloading, Overriding • Interface • Abstract Class • Final Keyword • Cloning Objects | 08 | 15 |
| 4 | <p>Working with Forms, Cookies and Session</p> <ul style="list-style-type: none"> • Important HTML Tags, integration of HTML Tag inPHP • Form controls: Textbox, Text area, List box, Dropdown, Check Box, Radio Box, Buttons, Upload, color, date etc. • Form validation using PHP • Super-Global Variable, GET,POST, isset(), isempty() • Retrieving form data using GET and POST methods • What are Cookies? Setting a cookies, accessing cookies data and destroying cookies. • What is session? Creating a session, • Storing and accessing session data and destroying session. | 08 | 15 |
| 5 | <p>Working with Database in PHP</p> <ul style="list-style-type: none"> • Introduction to My SQL database With PHP • Creating a data base using php My Admin & Consol • Connecting with My SQL database • Executing My SQL queries • Performing database operations: create/delete a table, insert data into table, Update data in to the table, Retrieve data from the table, Delete data from the table • Displaying data from the database in different formats, including tables | 12 | 20 |
| 6 | <p>Laravel Framework</p> <ul style="list-style-type: none"> • Basic Introduction to Laravel Framework • Working on mini project: Develop a simple web application | 04 | 10 |



Course Outcome:

| After learning the course the students should be able to: | |
|---|---|
| CO1 | Students should be able to develop PHP scripts using variables, operators and control structures. |
| CO2 | Students should be able to develop PHP scripts using arrays and functions. |
| CO3 | Students should be able to develop PHP scripts by applying object oriented concepts. |
| CO4 | Students should be able to develop web pages using form controls with validation to collect user inputs in PHP. |
| CO5 | Students should be able to develop and host interactive websites using PHP and MySQL database. |

List of Practical :

| Sr. No | Descriptions | Unit No | Hrs |
|--------|---|---------|-----|
| 1 | Environment Setup i) Install and configure PHP, Web Server and MySQL database using XAMPP / WAMP /LAMP/ MAMP. ii) Create a web page that displays "Hello World." | 1 | 2 |
| 2 | Variables, Operators and Expressions i) Write a script to implement a simple ii) calculator for mathematical operations. iii) A company has following payment scheme for their staff: a) Net Salary = Gross Salary –Deduction b) Gross Salary = Basic pay + DA + HRA + Medical c) Deduction = Insurance + PF Where, ▪ DA (Dearness Allowance) = 50% of Basic Pay ▪ HRA (House Rent Allowance) = 10% of Basic pay ▪ Medical = 4% of Basic pay ▪ Insurance=7% of Gross salary ▪ PF (Provident Fund) = 5% of Gross Salary Write a script to take the basic salary of an employee as input and calculate the net payment to any employee. | 1 | 2 |
| 3 | Decision making statements i) Write a program to find the 20% commission and 15% conversion of company if sales amount is greater than 50000. | 1 | 8 |



| | <p>ii) Write a PHP script to initialize three numbers and find out the maximum and minimum numbers out of these.</p> <p>iii) Write a PHP script to find gross salary. $G.S = \text{basic_salary} + \text{HRA} + \text{TA} + \text{DA} - \text{PF}$ $\text{HRA} = 250$ $\text{DA} = 5\% \text{ of Basic Salary (if Basic Salary} > 5000 \text{ then DA} = 6\% \text{ else DA} = 5\%)$ $\text{PF} = 6\% \text{ of Basic Salary}$</p> <p>iv) Write a script that reads the name of the car and displays the name of the company the car belongs to as per the below table:</p> <table border="1"> <thead> <tr> <th>Car</th> <th>Company</th> </tr> </thead> <tbody> <tr> <td>Safari, Nexon, Tigor, Tiago</td> <td>Tata</td> </tr> <tr> <td>XUV700, XUV300, Bolero</td> <td>Mahindra</td> </tr> <tr> <td>i20, Verna, Venue, Creta</td> <td>Hyundai</td> </tr> <tr> <td>Swift, Alto, Baleno, Brezza</td> <td>Suzuki</td> </tr> </tbody> </table> <p>v) Write a script to read the mark of 4 subjects and display the result as per the below instructions:</p> <table border="1"> <thead> <tr> <th>GRADE</th> <th>Mark - Range</th> </tr> </thead> <tbody> <tr> <td>AA</td> <td>85-100</td> </tr> <tr> <td>AB</td> <td>75-84</td> </tr> <tr> <td>BB</td> <td>65-74</td> </tr> <tr> <td>BC</td> <td>55-64</td> </tr> <tr> <td>CC</td> <td>45-54</td> </tr> <tr> <td>CD</td> <td>40-44</td> </tr> <tr> <td>DD</td> <td>35-39</td> </tr> <tr> <td>FF</td> <td><35 (FAIL)</td> </tr> </tbody> </table> <p>a) Each of the four subjects is worth 100 marks. b) If a student gets less than 35 marks in any subject, then he/she will be marked as FAIL, otherwise he/she will be marked as PASS. The result contains the grade of each individual subject in tabular form as per the above table.</p> <p>Loops</p> <p>i) Write a script to display Fibonacci numbers up to given term. ii) Write a script to display multiplication table for given number. iii) Write a script to check whether the given number is Armstrong or not. iv) Write a script to check whether the given number is palindrome or not.</p> | Car | Company | Safari, Nexon, Tigor, Tiago | Tata | XUV700, XUV300, Bolero | Mahindra | i20, Verna, Venue, Creta | Hyundai | Swift, Alto, Baleno, Brezza | Suzuki | GRADE | Mark - Range | AA | 85-100 | AB | 75-84 | BB | 65-74 | BC | 55-64 | CC | 45-54 | CD | 40-44 | DD | 35-39 | FF | <35 (FAIL) | | |
|-----------------------------|---|-----|---------|-----------------------------|------|------------------------|----------|--------------------------|---------|-----------------------------|--------|-------|--------------|----|--------|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|----|------------|--|--|
| Car | Company | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Safari, Nexon, Tigor, Tiago | Tata | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| XUV700, XUV300, Bolero | Mahindra | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| i20, Verna, Venue, Creta | Hyundai | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Swift, Alto, Baleno, Brezza | Suzuki | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GRADE | Mark - Range | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| AA | 85-100 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| BB | 65-74 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| DD | 35-39 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FF | <35 (FAIL) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | <p>Arrays</p> <p>i) Write a script to sort a given indexed array in ascending order and descending order using function.</p> | 2 | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |



| | | | |
|---|---|---|----|
| | <ul style="list-style-type: none"> ii) Write a script to sort a given indexed array in ascending order and descending order without using function. iii) Write a script to perform 3x3 matrixes Multiplication. iv) Write a script to encode a given message in to equivalent Morse code. | | |
| 5 | <p>Functions</p> <ul style="list-style-type: none"> i) Write a PHP script to perform all mathematical operations using user define function. ii) Write a PHP string find out square and cube of given number using parameterized user define function. iii) Consider a currency system in which there are notes of 7 denominations, namely Rs. 1, Rs.2, Rs.5, Rs.10, Rs.20, Rs.50 and Rs.100. iv) Write a function that computes the smallest number of notes that will combine for a given amount of money. v) Write scripts using string functions: <ul style="list-style-type: none"> a) to check if the given string is lower case or not. b) to reverse the given string. c) to remove white spaces from the given string. d) to replace the given word from the given string. Write a script to calculate the length of a string and count the number of words in the given string without using string functions. vi) Write scripts using math functions: <ul style="list-style-type: none"> a) to generate a random number between the given range. b) to display the binary, octal and hexadecimal of a given decimal number. c) to display the sin, cos and tan of the given angle. vii) Write a script to display the current date and time in different formats. | 2 | 6 |
| 6 | <p>OOP Concepts</p> <ul style="list-style-type: none"> i) Write a script to: <ul style="list-style-type: none"> a) Define a class with construct or and destructor. b) Create an object of a class and access its public properties and methods. ii) Write a script that uses the set attribute and get attribute methods to access a private attributes of a class. iii) Write a script to demonstrate single inheritance. iv) Write a script to demonstrate multiple inheritances. v) Write a script to demonstrate multi level Inheritance. vi) Write a script to demonstrate method overriding. vii) Write a script to demonstrate method overloading based on the number of arguments. viii) Write a script to demonstrate a simple interface. ix) Write a script to demonstrate a simple abstract class. | 3 | 10 |



| | | | |
|----|--|---|----|
| | x) Write a script to demonstrate cloning of objects. | | |
| 7 | Forms i) Create a web page that collects user information using a form and displays it when the user clicks the submit button. ii) Create a webpage using a form to collect employee information. iii) Extend practical - 8 (i) to validate user information using regular expressions. iv) Create two distinct web pages to demonstrate information passing between them using URL - Get method. v) Create two different webpages to demonstrate information passing between web pages using Hidden variables -Post method. | 4 | 8 |
| 8 | Session, Cookies i) Create web pages to demonstrate passing information using Session. ii) Write a script to demonstrate storing and retrieving information from cookies. | 4 | 2 |
| 9 | Database i) Create a web page that reads employee information using a form and stores it in the database. ii) Create a web page for employee log-in. iii) Write a script to upload an image to the server. iv) After an employee logs in, create a Home web page that displays basic employee information. v) Create a web page to delete employee profiles from the database. vi) Create a web page that allows employees to change their password. | 5 | 8 |
| 10 | Email, PDF, JSON i) Write a script to generate a salary slip for an employee in PDF format. ii) Write a script to send an email. iii) Write a script to convert an associative array into JSON string format and vice versa. | 5 | 4 |
| 11 | Simple Web Application Create a simple web application for Employee Management with 3-4 web pages and host it using cPanel and Filezilla. (Use Laravel Framework) | 6 | 2 |
| | Total | | 56 |



Instructional Method:

The course delivery method will depend upon the requirement of content and need of students. The teacher in addition to conventional teaching method by black board, may also use any of tools such as demonstration, role play, Quiz, brainstorming, MOOCs etc.

From the content 10% topics are suggested for flipped mode instruction.

Students will use supplementary resources such as online videos, NPTEL / SWAYAM videos, e-courses, Virtual Laboratory

The internal evaluation will be done on the basis of Active Learning Assignment

Practical/Viva examination will be conducted at the end of semester for evaluation of performance of students in laboratory.

Reference Books:

- [1] PHP5.1 for beginners - Ivan Bayross, sharanamshah
- [2] PHP: The Complete Reference - Steven Holzner
- [3] PHP and MySQL Web Development - Laura Thomson, Luke Welling
- [4] PHP Cookbook - David Sklar, Adam Trachtenberg

