Gyanmanjari Innovative University

Course Syllabus
Gyanmanjari College of Computer Science
Semester-1(MSCIT)

Subject: Web Application Development Using PHP - MSCIT11501

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 ona 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 learn the integration of HTML, CSS, PHP and MySQL database to develop web applications. This course will help students who want to develop web-based applications for their final year project.

Teaching Scheme			Credits	Examination Marks					Total Marks
				Theory Marks		Practical Marks		CA	
CI	T	P	C	ESE	MSE	V	P	ALA	
0	1	4	3	0	0	20	80	50	150

Teaching and Examination Scheme:Legends: CI-Class Room 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:

(For each activity maximum-minimum range is 5 to 10 marks)

Sr. No	Active Learning Activities	Marks
1	Prepare a journal of Assignment practicals & Lab Manual.	10
2	Building a Project: Assign students a web development project that requires them to build a dynamic website using PHP.	10
3	Interactive Workshops: Host interactive workshops where you demonstrate PHP concepts, techniques, and best practices.	10
4	Encourage students to participate in different coding competitions like hackathons, online competitions on Code chef etc.	10
5	Website Maintenance: Once a website is up and running, it requires maintenance to keep it secure and up-to-date. Students can learn about website maintenance, including updates, backups, and security.	10
Total		50

CourseContent:

Sr. No	Course content	Hrs	% Weightage
1	**Introduction to PHP** • Introduction to different kinds of Languages • Introduction to PHP for Web Development, History and future scope of PHP, state the relationship between PHP, MySQL 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	**Array and Function** • What is an Array, Types of Array- Numeric array and	12	20

	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, strtoupeer, ltrim, rtrim, trim, substr, strcmp, strcasecmp, ctrops, strops, stristr, strrev, 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, end, each, array_merge, array_reverse, sort Variable Function: gettype, settype, isset File Function: Fopen, fread, fwrite, fclose		
3	**Object Oriented concepts in PHP** • 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	**Working with Forms, Cookies andSession** • Important HTML Tags, integration of HTML Tag in PHP • Form controls: Textbox, Textarea, 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	**Working with Database in PHP** • Introduction to MySQL database with PHP • Creating a database using phpMyAdmin&Consol • Connecting with MySQL database	12	20

	• Executing MySQL queries • Performing database operations : create/delete a table, insert data into table, Update data into the table, Retrieve data from the table, Delete data from the table • Displaying data from the database in different formats, including tables		
6	**Laravel Framework** • Basic Introduction to Laravel Framework • Working on mini project: Develop a simple web application	04	10

Suggested Specification table with Marks (Theory):60

Distribution of Theory Marks (Revised Bloom's Taxonomy)						
Level	Remembrance (R)	Understanding (U)	Application (A)	Analyze (N)	Evaluate (E)	Create (C)
Weightage	0	0	0	0	0	0

Note: This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks in the question paper may vary slightly from above table.

Course Outcome:

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

List of Practical

(Minimum-10 practical):

<table>
<tr><th>Sr. No</th><th>Descriptions</th><th>Unit No</th><th>Hrs</th></tr>
<tr><td>1</td><td>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.”</td><td>1</td><td>2</td></tr>
<tr><td>2</td><td>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.</td><td>1</td><td>2</td></tr>
<tr><td>3</td><td>Decision making statements
i) Write a program to find the 20% commission and 15% conversion of company if sales amount is greater than 50000.
ii) Write a PHP script to initialize three numbers and find out the maximum and minimum numbers out of these.
iii) Write a PHP script to find gross salary.
(G.S=basic_salary+HRA+TA+DA-PF)
HRA=250
DA=5% of Basic Salary (if Basic Salary >5000 than DA=6% else DA=5%)
PF=6% of Basic Salary
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:
<table>
<tr><th>Car</th><th>Company</th></tr>
<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>
</table>
v) Write a script to read the mark of 4 subjects and display the result as per the below instructions:
<table>
<tr><th>GTU GRADE</th><th>Mark - Range</th></tr>
</table></td><td>1</td><td>10</td></tr>
</table>

		AA | 85-100 AB | 75-84 BB | 65-74 BC | 55-64 CC | 45-54 CD | 40-44 DD | 35-39 FF | <35 (FAIL) 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 format as per the above table.		
		Loops 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.		
4		**Arrays** i) Write a script to sort a given indexed array in ascending order and descending order using function. 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 3 x 3 matrixes Multiplication. iv) Write a script to encode a given message into equivalent Morse code.	2	4
5		**Functions** 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: a] to check if the given string is lowercase or not. b] to reverse the given string.	2	6

	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: 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.		
6	**OOP Concepts** i) Write a script to: a) Define a class with constructor 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 multilevel 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. x) Write a script to demonstrate cloning of objects.	3	12
7	**Forms** i) Create a web page that collects user information using a formand displays it when the user clicks the submit button. ii) Create a web page using a form to collect employee information. iii) Extend practical - 8(i) to validate user information using regular expressions. iv) Create two distinctweb pages to demonstrate information passing between them using URL - Get method. v) Create two different web pages to demonstrate information passing between web pages using Hidden variables – Post method.	4	10

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	10
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 iv) array into JSON string format and vice versa.	5	6
11	**Simple Web Application** Create a simple web application for Employee Management with 3-4 web pages and host it using cPanel and Filezila. (Use Laravel Framework)	6	6
		Total	70

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] PHP 5.1 for beginners - Ivan Bayross, sharanam shah

[2] PHP: The Complete Reference - Steven Holzner

[3] PHP and MySQL Web Development - Laura Thomson, Luke Welling

[4] PHP Cookbook - David Sklar, Adam Trachtenberg