Course Title: Web Technology II **Credit: 3**
Course No: CSIT.325 **Number of period per week: 3+3**
Nature of the Course: Theory + Lab **Total hours: 45+45**
Year: Third, Semester: Sixth
Level: B. Sc. CSIT

1. Course Introduction

In addition to creating web sites and enhancing their basic programming skills, students will learn to embed PHP in HTML, to interact with MySQL databases through the PHP engine, accessibility issues, and the basics of (secure) file transfers, file management, and web server configuration.

2. Objectives

By the end of this course, students will be able to

- Understand of PHP and programming with PHP
- Work by using MySQL with PHP
- Use very simple regular expressions
- Put all of these ideas together to create web sites

3. Specific Objectives and Contents

Specific Objectives	Contents
• Understand and explain importance of PHP • Understand basics of PHP syntax and programming • Embed PHP codes into web pages	**Unit I: PHP Fundamentals (7 Hrs)** 1.1. Introduction: What is PHP?, The history of PHP, What does PHP do?, PHP Installation and Configuration. 1.2. Language Basics: Lexical Structures, Variables, Data Types, Expressions and Operators 1.3. Flow Controls: If, switch, while, for, foreach, try...catch, declare, exit, return, go to. 1.4. Including Code, Different styles of Embedding PHP in Web Pages
• Understand and demonstrate functions in PHP • Explain variable scopes, parameters and return values in functions • Handle strings and regular expressions in PHP	**Unit II: Functions Strings (7 hr)** 2.1. Defining Function, Calling Function, Variable Scope, Function Parameters, Returning Values, Variable Functions, Anonymous Functions 2.2. String Constants, Printing Strings, Accessing Characters, Cleaning Strings. 2.3. Encoding and Escaping Strings, Comparing Strings, Manipulating and Searching Strings, Regular Expression
• Demonstrate different types of arrays • Apply arrays in writing PHP	**Unit III: Arrays and Objects (7 hr)** 3.1. Indexed Arrays, Associative Arrays, Accessing Array Elements, Storing Data, Extracting Multiple Values,

programs • Understand Objects and other OOP concepts • Use OOP concepts in writing PHP programs	Multidimensional Arrays. 3.2. Converting between Arrays and Variables, Different Ways of Traversing Arrays, Sorting, Acting on Arrays. 3.3. Creating Objects, Accessing Properties and Methods, Declaring Classes 3.4. Constructors, Destructors, Inheritance, Interfaces, Abstract Classes
• Understand HTTP and Web server basics • Explain GET and POST in form processing • Exemplify file uploading and form validation • Demonstrate sessions and cookies	**Unit IV: Form Processing (6 hr)** 4.1. HTTP Basics, Server Variables, Getting Server Information 4.2. PHP Get & POST, Form Processing, Methods, Form Parameters, Form Validation, File Uploads, Setting Response Headers 4.3. Working with cookies, Setting cookie values, Reading cookie values, Unsetting cookie values, Working with sessions, SSL
• Understand MySQL and RDBMS • Connect PHP with MySQL and retrieve data from it • Demonstrate SQL operations by using PHP • Use complex SQL operations through PHP	**Unit V: Database Connectivity (6 Hrs)** 5.1. Using PHP to access Database, Relational Databases and SQL, PHP Data Objects 5.2. MySQL Object Interface, Retrieving Data for Display, SQLite 5.3. Performing basic database operation (DML) (Insert, Delete, Update, Select), Setting query parameter Executing query, 5.4. Cartesian Product and Join Operations, Prepared Statements
• Creating and drawing images suitable for web pages • Embedding images in web pages • Understand and implement security techniques with web pages.	**Unit VI: Graphics and Security (6 Hrs)** 6.1. Embedding Images, Basic Graphics Concepts, Creating and Drawing Images, Images with Text 6.2. Dynamically Generated Buttons, Scaling Images, Color Handling 6.3. Security: Filter Input, Cross-Site Scripting, Escape Output, Session Fixation, File Upload, File Access
• Understand basics of different frameworks and CMS systems used in PHP programs • Use basic functionalities of Wordpress.	**Unit VII: Framework and CMS(6 Hrs)** 7.1. Frameworks: Introduction of CodeIgniter, Cake PHP 7.2. CMS: Introduction of Wordpress, Joomla, Drupal, Magento 7.3. Wordpress Introduction: Using domain names, Hosting Options, Dashboard, Pages, Directory Permissions, Tags, Settings

Evaluation System

Undergraduate Programs							
External Evaluation	**Marks**	**Internal Evaluation**	**Weightage**	**Marks**	**Practical**	**Weightage**	**Mark**
End semester examination	60	Assignments	20%	20	Practical Report copy	25%	20
(Details are given in the separate table at the end)		Quizzes	10%		Viva	25%	
		Attendance	20%		Practical Exam	50%	
		Internal Exams	50%				
Total External	60	Total Internal	100%	20		100%	20
Full Marks 60+20+20 = 100							

External evaluation

1. **End semester examination:**
   It is a written examination at the end of the semester. The questions will be asked covering all the units of the course. The question model, full marks, time and others will be as per the following grid.

2. **External Practical Evaluation:**
   After completing the end semester theoretical examination, practical examination will be held. External examiner will conduct the practical examination according to the above mentioned evaluation. There will be an internal examiner to assist the external examiner. Three hours time will be given for the practical examination. In this examination Students must demonstrate the knowledge of the subject matter.

Full Marks: 100, Pass Marks: 45, Time: 3 Hrs

Nature of question	Total questions to be asked	Total questions to be answered	Total marks	Weightage
Group A: multiple choice*	20	20	20×1 = 20	60%
Group B: Short answer type questions	7	6	6×8 = 48	60%
Group C: Long answer type questions	3	2	2×16 =32	60%
			100	100%

Each student must secure at least 50% marks in internal evaluation in order to appear in the end semester examination. Failed student will not be eligible to appear in the end semester examinations.

Internal evaluation

Assignment: Each student must submit the assignment individually. The stipulated time for submission of the assignment will be seriously taken.

Quizzes: Unannounced and announced quizzes/tests will be taken by the respective subject teachers. Such quizzes/tests will be conducted twice per semester. The students will be evaluated accordingly.

Attendance in class: Students should regularly attend and participate in class discussion. Eighty percent class attendance is mandatory for the students to enable them to appear in the end semester examination. Below 80% attendance in the class will signify NOT QUALIFIED (NQ) to attend the end semester examination.

Presentation: Students will be divided into groups and each group will be provided with a topic for presentation. It will be evaluated individually as well as group-wise. Individual students have to make presentations on the given topics.

Mid-term examination: It is a written examination and the questions will be asked covering all the topics in the session of the course.

Discussion and participation: Students will be evaluated on the basis of their active participation in the classroom discussions.

Instructional Techniques: All topics are discussed with emphasis on real-world application. List of instructional techniques is as follows:

- Lecture and Discussion
- Group work and Individual work
- Assignments
- Presentation by Students
- Quizzes
- Guest Lecture

Students are advised to attend all the classes and complete all the assignments within the specified time period. If a student does not attend the class (es), it is his/her sole responsibility to cover the topic(s) taught during that period. If a student fails to attend a formal exam/quiz/test, there won't be any provision for re-exam. Unless and until the student clears one semester he/she will not be allowed to study in the following semesters.

Laboratory Work

Student should write programs and prepare lab sheet for all of the units in the syllabus. Students should be able to write PHP scripts by using various concepts discussed in class. The lab work should be practiced for minimum of 3 lab hours per week.

Prescribed Text

1. Kevin Tatore, Peter MacIntyre, Ramus Lerdorf, Programming PHP, O'Reilly Media, Third Edition Edition, 2013

References

1. David Sklar, Learning PHP 5, A Pain-Free Introduction to Building Interactive Web Sites**,** O'Reilly Media,
2. Robin Nixon, "Learning PHP, MySQL & JavaScript: With jQuery, CSS & HTML5",
3. Luke Welling ,PHP and MySQL Web Development, Addison-Wesley Professional O'Reilly Media

Note:- Students and Instructors need to follow web resources for last unit