Web Technology II

EG2205CT

Year: II **Total: 7 hours /week**

Part: II **Lecture: 3 hours/week**

Tutorial: 1 hour/week

Practical: hours/week

Lab: 3 hours/week

Course description:

The purpose of this course is to introduce the concepts of Web Technology using PHP programming including introduction, basic structure, classes and objects, inheritance and exception handling. This course also helps to implement database connectivity and manipulation, XML, AJAX and PHP framework. At the end, students will be able to design and develop dynamic web contents and applications.

Course objectives:

After completion of this course students will be able to:

1. Implement PHP for the basic of server-side scripting language
2. Apply PHP and MySQL for the fundamentals of database, database design and their uses in web programming
3. Use XML, AJAX and Content Management Systems

Course Contents:

Theory

Unit 1. Web Server Concept **[5 Hrs.]**

1.1. Introduction to Web Server
1.2. Architecture of web server
1.3. Concept of Dynamic Content
1.4. Using control flow to control dynamic content generation
1.5. Concept of Architecting Web Application

Unit 2. Review of Database: MySQL **[4 Hrs.]**

2.1. Introduction to MySQL
2.2. MySQL queries
  2.2.1. Create
  2.2.2. Insert
  2.2.3. Select
  2.2.4. Update
  2.2.5. Delete
  2.2.6. Alter
2.3. Database Normalization

Unit 3. Server-Side Script: PHP **[12 Hrs.]**

3.1. Introduction of PHP
3.2. Advantage of using PHP for web development
3.3. PHP Installation
3.4. PHP Syntax
3.5. Comments, Variable, Operators, Datatype, Strings, Keywords
3.6. Conditional Statements
3.7. Loop
3.8. Arrays

3.9. Functions
3.10. Passing variables with data between pages
  3.10.1. Get & Post Method
  3.10.2. Cookies
  3.10.3. Sessions
3.11. File Upload: Date, Include, File, File Upload
3.12. Accessing Form Elements, Form Validation
3.13. Exception and Error Handling

Unit 4. Object oriented concept and Database Connectivity [8 Hrs.]

4.1. Classes and Objects
4.2. Access Modifiers
4.3. Constructors and Destructors
4.4. Inheritance and Scope
4.5. Overwriting Methods
4.6. Database Connectivity
  4.6.1. Creating database with Server-Side Script
  4.6.2. Connecting Server-Side Script to Database
  4.6.3. Multiple Connections
  4.6.4. Making queries
  4.6.5. Building in Error Checking
  4.6.6. Fetching Data sets
  4.6.7. Displaying Queries in tables
  4.6.8. Building Forms and control form data using queries

Unit 5. AJAX and eXtensible Markup Language (XML) [8 Hrs.]

5.1. Basic concept of AJAX
5.2. Features of XML
5.3. Structure of XML: Logical Structure, Physical Structure
5.4. Naming Rules
5.5. XML Elements
5.6. XML Attributes
5.7. Element Content Models: Element Sequences i.e., <!ELEMENT counting (first, second, third, fourth)>, Element Choices <!ELEMENT choose (this.one | that.one)>, Combined Sequences and Choices
5.8. Element Occurrence Indicators: -Discussion of Three Occurrence Indicators? (Question Mark) * (Asterisk Sign) + (Plus Sign)
5.9. XML schema languages: Document Type Definition (DTD), XML Schema Definition (XSD)
5.10. XML Style Sheets (XSLT)

Unit 6. PHP Framework [8 Hrs.]

6.1. Introduction
6.2. Features
6.3. Basic DB & Client-Side Validation
6.4. Session & Email System
6.5. Framework with method, Classes and Cookies

Practical: **[45 Hrs.]**

1. Installing required software and platforms for local servers and scripting (IDE, XAMPP, WAMPP, LAMPP etc.)
2. Simple programs using;
   2.1 Control and loops
   2.2 Strings
   2.3 Arrays
   2.4 Functions
3. Passing Information between pages
4. Forms handling, validation etc.
5. Writing to file, reading from file and file upload
6. Examples of sessions and cookies
7. Connecting to database
8. Using various queries on database to extract, insert, update and delete from the web interface
9. Using XML markup elements and its attributes
10. Concept of using simple AJAX in webpage
11. Design and develop a dynamic web page which should include database

Final written exam evaluation scheme			
Unit	**Title**	**Hours**	**Marks Distribution***
1	Web Server Concept	5	10
2	Review of database: MySQL	4	8
3	Server-Side Script: PHP	12	20
4	Object oriented concept and Database Connectivity	8	14
5	AJAX and eXtensible Markup Language (XML)	8	14
6	PHP Web Design Framework	8	14
	Total	**45**	**80**

* There may be minor deviation in marks distribution.

References:

1. Bayross "*Web Enabled Commercial Application Development Using HTML, DHTML, JavaScript, PHPI*" BPB Publication
2. Hornberger Allen, "*Mastering in PHP*", BPB Publication
3. Converse and Park with Morgan "*PHP MYSQL Bible*" WILEY Publication
4. Sybex "*ASP, ADO and XML Complete*" BPB Publication
5. Russell "*Mastering Active Server Pages* "(BPB)