

**Web Technologies II (3-0-3)**  
**BCA, Third Year, Sixth Semester**

**Evaluation:**

	Theory	Practical	Total
Sessional	30	20	50
Final	50	-	50
Total	80	20	100

**Course Objectives:**

The student would be able

1. To expose the students with client and server side web programming.
2. To know flexible but powerful languages for developing dynamic web pages.
3. To get practical knowledge of server side scripting languages like Servlet, JSP and PHP.
4. To help the students to understand the concept of HTML, Servlet, JSP and PHP.

**1 Web Essentials: Clients, Servers, and Communication**

**4 hrs**

**1.1 Review of Web Technologies I**

Basic internet protocols, HTTP request message, HTTP response message, web clients, web servers

1.2 Different architectures of connection

1.3 Client side Vs server side scripting language

**2 Web-based scripting using PHP**

**12 hrs**

**2.1 Introduction to PHP**

Installation of Web Server, PHP Server Configurations; PHP MyAdmin, Writing simple PHP program, Arrays, Control statements, loops, User defined functions (with argument and return values), global variable, URL encoding, HTML Encoding

**2.2 PHP and Database connectivity**

Need for database, php supported database, Introduction to MySQL, CRUD - select statements, creating database/tables, inserting values, updating and deleting

**2.3 File handling in PHP**

Reading and writing from and to FILE, file system and directory functions

**2.4 More features of PHP**

Working with cookies and sessions, Sending email in php

**3 Java for Server Side Programming**

**12 hrs**

**3.1 Java Servlets**

Servlet architecture, servlet lifecycle, parameter data, session, cookies, url rewriting, data storage

**3.2 JSP technology**

Introduction to JSP, JSP and servlet, Database Access, Database Programming using JDBC Studying Javax.sql.\* package, Accessing a Database from a JSP Page

**4 Web-based frameworks**

**6 hrs**

4.1 Content Management Systems

4.2 Web-programming frameworks

4.2.1 Introduction to general web programming frameworks

4.2.2 Java frameworks



#### 4.2.3 PHP frame work

### 5 Web Services

4 hrs

5.1 Introduction to web services and service-oriented architecture

#### 5.2 SOAP

SOAP elements, RPC representation, SOAP encoding of struct data

5.3 WSDL

5.4 Concept of UDDI

5.5 RESTful web services

### 6 Security in web applications

7 hrs

#### 4.1 Web application security fundamentals

Foundations of security, threats, vulnerabilities, attacks, security principles

#### 4.2 Threats and countermeasures

Anatomy of attack, network threats and countermeasures, host threats and countermeasures, application threats and countermeasures, configuration managements

#### 4.3 Design guidelines for secure web applications

Architecture and design issues for web applications, deployment considerations, input validations, authentication, authorization, configuration management, sensitive data, session management, cryptography, parameter manipulation, exception management, auditing and logging

#### List of Practical:

1. Demonstrate use of variables, operators, conditional statements and looping constructs.
2. Demonstrate use of array
3. Design a web page with controls like text box, radio button, check box, combo box etc, and check field data and their validity.
4. Demonstrate reading and writing to a text file.
5. Design a web page which will help user to send an enquiry to site admin email account. (Hint: take users email id, subject, and body in suitable controls and a button).
6. Design a web page to develop applications using back-end tools

#### Text Books:

1. Jeffry C. Jackson-Web Technologies: A computer Science Perspective, Pearson
2. Steve Suehring, Tim Converse and Joyce park -PHP 6 and Mysql

#### References:

1. B M Harwani -Developing Web Applications in PHP and AJAX, McGraw Hill
2. Mark Curphey, Joel Scambray, Erik Olson and Michel Howard-Improving Web Application Security Threats and Countermeasures, Microsoft
3. N. P. Gopalan, J Aklandeswari- Web Technology: A Developer's Perspective, PHI
4. Uttam K. Roy- Web Technologies, Oxford University Press
5. Kognet Learning solution -Web Technologies Black Book, Dream tech publication

