

**COURSE CODE:** CS-343  
**COURSE NAME:** WEB TECHNOLOGIES

**CREDIT HOURS:** Theory = 02  
 Practical = 01  
 Total = 03

**CONTACT HOURS:** Theory = 32  
 Practical = 48  
 Total = 80

**PREREQUISITE:** CS-114 (Fundamentals of Programming)

**MODE OF TEACHING:**

Instruction: Two hours of lecture per week 67%  
 Practical: Three hours of Lab work per week 33%

**COURSE DESCRIPTION:**

On completion of this course, a student will be familiar with client server architecture and able to develop a web application using java technologies. Students will gain the skills and project-based experience needed for entry into web application and development careers.

**COURSE OBJECTIVES:**

The students are expected to achieve the following:

1. Understand about World Wide Web & Internet
2. Will be able to develop Websites and applications
3. Will be able to understand, design and develop techniques for building Web applications
4. Will be able to learn techniques and use them to ensure proper operability, and functioning of a Web application

**RELEVANT PROGRAM LEARNING OUTCOMES (PLOs):**

The course is designed so that students will achieve the PLOs:

- |   |                                  |                                     |    |   |                          |
|---|----------------------------------|-------------------------------------|----|---|--------------------------|
| 1 | Engineering Knowledge:           | <input checked="" type="checkbox"/> | 7  | Ethics:                                 | <input type="checkbox"/> |
| 2 | Problem Analysis:                | <input type="checkbox"/>            | 8  | Individual and Collaborative Team Work: | <input type="checkbox"/> |
| 3 | Design/Development of Solutions: | <input checked="" type="checkbox"/> | 9  | Communication:                          | <input type="checkbox"/> |
| 4 | Investigation:                   | <input checked="" type="checkbox"/> | 10 | Project Management:                     | <input type="checkbox"/> |
| 5 | Tool Usage:                      | <input checked="" type="checkbox"/> | 11 | Lifelong Learning:                      | <input type="checkbox"/> |
| 6 | The Engineer and Society:        | <input type="checkbox"/>            |    |   |                          |

**COURSE LEARNING OUTCOMES:**

Upon successful completion of the course, students will be able to:

No.	CLO	Domain	Taxonomy Level	PLO
1	Define the concepts relating to World Wide Web	Cognitive	1	1
2	Use design and development techniques for developing user centric and/or data-driven Web applications	Cognitive	3	3

3	Apply implementation strategies provided by various modern frameworks for creating Web applications.	Cognitive	4	4
4	Design Static and Dynamic Websites and applications using modern tools and frameworks	Psychomotor	7	5

## TOPICS COVERED:

### Theory:

No.	Topic
1	Introduction to Web & Web applications <ul style="list-style-type: none"> <li>Course Introduction, About Web: Definition, Internet Protocols (Layers),</li> <li>Client Server Model, Request Response Loop, Peer to Peer model.</li> <li>Role of DNS, HTTP, Uniform Resource Locators (URL), Web Servers</li> </ul>
2	Client Side - Static content <ul style="list-style-type: none"> <li>HTML: Syntax, Structure, Elements, Markup.</li> <li>HTML5, Role of W3C, Doc Type, HTML essentials</li> </ul>
3	Client Side - Static content <ul style="list-style-type: none"> <li>HTML Tags, nested tags, required structured tags, Doctype, Head, Divs, Images, Links, Lists, Tables, Nav Bar</li> </ul>
4	Client Side - Styling to static content <ul style="list-style-type: none"> <li>CSS1: Syntax, Blocks, Selectors, Properties, Inline styles, Id vs class sectors, Margins, Borders, Text, Style sheets</li> <li>CSS3: Bootstrap, Media Queries, Responsive Grid, Grid layout and use of class keyword</li> </ul>
5	Client Side – Dynamic content <ul style="list-style-type: none"> <li>Javascript: design, syntax,</li> <li>XHTML: DOM, Events</li> <li>TypeScript</li> </ul>
6	Client Side – Reading and storing static content <ul style="list-style-type: none"> <li>XML: syntax, elements, attributes, parser, DTD: schema</li> <li>JSON basics</li> </ul>
7	Client Side – Dynamic content <ul style="list-style-type: none"> <li>AJAX and JQuery: Library, syntax, scripting, functions, event actions on clicks</li> </ul>
8	Client Side – Dynamic content <ul style="list-style-type: none"> <li>AJAX and JQuery: Variables, , usages, if-else structure, logical operators</li> </ul>
9	Client Side – Managing dynamic content <ul style="list-style-type: none"> <li>Angular JS: Advantages, features</li> </ul>
10	Client Side – Managing dynamic content <ul style="list-style-type: none"> <li>Angular: Architecture, Advantages, features</li> </ul>
11	Server Side – Static content <ul style="list-style-type: none"> <li>PHP: Server side scripting concept, introduction, syntax, control structures, Datatypes, Strings, printf,</li> </ul>
12	Server Side – Content generation <ul style="list-style-type: none"> <li>PHP: if-else, do-while, for clause, arrays, Classes and Objects</li> <li>PHP Laravel Framework</li> </ul>
13	Server Side – Storing content <ul style="list-style-type: none"> <li>MySQL: Database &amp; Web, MySQL, stored procedures, stored functions</li> </ul>

	<ul style="list-style-type: none"> <li>• PHP Laravel Frame continued</li> </ul>
14	Server Side – Passing content within apps <ul style="list-style-type: none"> <li>• PHP: Session variables and JSON</li> <li>• LaraVel Framework</li> </ul>
15	Projects week and Advanced technologies

**TEXT AND MATERIAL:**

**Textbook (s):**

- The Complete Reference, HTML & XHTML (2003), Thomas Powell
- Web Programming: Building Internet Applications (2007) 2<sup>nd</sup>, 3<sup>rd</sup> Edition by Chris Bates
- Forbes, Alan. The Joy of PHP: A Beginner's Guide to Programming Interactive Web Applications with PHP and MySQL (2015)

**References Material:**

- W3Schools (<https://www.w3schools.com/>)
- PHP Homepage (<http://php.net/>)
- Stackoverflow (<https://stackoverflow.com/>)

**ASSESSMENT SYSTEM:**

**1. CLOs Assessment**

Cognitive	Psychomotor	Affective
Spreadsheet	Rubrics	-

**2. Relative Grading**

<b>Theoretical/Instruction</b>			67%
	<i>Assignments</i> 20%		
	<i>Quizzes</i> 10%		
	<i>Mid Semester Exam</i> 20%		
	<i>End Semester Exam</i> 50%		
<b>Practical Work</b>			33%
<i>Laboratory Work</i>		80%	
	<i>Laboratory Repor/Rubrics</i> 60%		
	<i>Laboratory Quiz</i> 20%		
<i>Viva/Quiz</i>		20%	
<b>Total</b>			<b>100%</b>