



### **COURSE INFORMATION SHEET**

|                                                    |                                                                     |
|----------------------------------------------------|---------------------------------------------------------------------|
| <b>Course: WEB TECHNOLOGY AND ITS APPLICATIONS</b> | <b>Semester: 7</b>                                                  |
| <b>Course Code: 17CS71</b>                         | <b>Course Type: Regular</b>                                         |
| <b>Lecture Hours / Week: 3 Hours/Week</b>          | <b>Scheme: 2017</b>                                                 |
| <b>Exam Hours / Exam Marks: 3 Hrs / 60 Marks</b>   | <b>Credits: 4</b>                                                   |
| <b>Corresponding Lab Course Code: 17CSL77</b>      | <b>Lab Course Name: WEB TECHNOLOGY LABORATORY WITH MINI PROJECT</b> |

### **SYLLABUS:**

| <b>Module No.</b> | <b>Details</b>                                                                                                                                                                                                                                                                                                                                                                               | <b>Hours</b> |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Module 1          | Introduction to HTML, What is HTML and Where did it come from?, HTML Syntax, Semantic Markup, Structure of HTML Documents, Quick Tour of HTML Elements, HTML5 Semantic Structure Elements, Introduction to CSS, What is CSS, CSS Syntax, Location of Styles, Selectors, The Cascade: How Styles Interact, The Box Model, CSS Text Styling.                                                   | 10           |
| Module 2          | HTML Tables and Forms, Introducing Tables, Styling Tables, Introducing Forms, Form Control Elements, Table and Form Accessibility, Microformats, Advanced CSS: Layout, Normal Flow, Positioning Elements, Floating Elements, Constructing Multicolumn Layouts, Approaches to CSS Layout, Responsive Design, CSS Frameworks.                                                                  | 10           |
| Module 3          | JavaScript: Client-Side Scripting, What is JavaScript and What can it do?, JavaScript Design Principles, Where does JavaScript Go?, Syntax, JavaScript Objects, The Document Object Model (DOM), JavaScript Events, Forms, Introduction to Server-Side Development with PHP, What is Server-Side Development, A Web Server's Responsibilities, Quick Tour of PHP, Program Control, Functions | 10           |

|                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |           |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| Module 4           | PHP Arrays and Superglobals, Arrays, \$_GET and \$_POST Superglobal Arrays, \$_SERVER Array, \$_FILES Array, Reading/Writing Files, PHP Classes and Objects, Object-Oriented Overview, Classes and Objects in PHP, Object Oriented Design, Error Handling and Validation, What are Errors and Exceptions?, PHP Error Reporting, PHP Error and Exception Handling                                                                                    | 10        |
| Module 5           | Managing State, The Problem of State in Web Applications, Passing Information via Query Strings, Passing Information via the URL Path, Cookies, Serialization, Session State, HTML5 Web Storage, Caching, Advanced JavaScript and jQuery, JavaScript Pseudo-Classes, jQuery Foundations, AJAX, Asynchronous File Transmission, Animation, Backbone MVC Frameworks, XML Processing and Web Services, XML Processing, JSON, Overview of Web Services. | 10        |
| <b>TOTAL HOURS</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>50</b> |

**TEXT BOOKS / REFERENCE BOOKS:**

| <b>Text / Reference</b> | <b>Book Title / Author / Publication / Edition</b>                                                                                                            |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Text 1                  | Randy Connolly, Ricardo Hoar, "Fundamentals of Web Development", 1 stEdition, Pearson Education India. (ISBN:978-9332575271)                                  |
| Ref 1                   | Robin Nixon, "Learning PHP, MySQL & JavaScript with jQuery, CSS and HTML5", 4thEdition, O'Reilly Publications, 2015. (ISBN:978-9352130153)                    |
| Ref 2                   | Luke Welling, Laura Thomson, "PHP and MySQL Web Development", 5th Edition, Pearson Education, 2016. (ISBN:978-9332582736)                                     |
| Ref 3                   | Nicholas C Zakas, "Professional JavaScript for Web Developers", 3rd Edition, Wrox/Wiley India, 2012. (ISBN:978-8126535088)                                    |
| Ref 4                   | David Sawyer Mcfarland, "JavaScript & jQuery: The Missing Manual", 1st Edition, O'Reilly/Shroff Publishers & Distributors Pvt Ltd, 2014 (ISBN:978-9351108078) |
| Ref 5                   | Rajkumar Buyya, S Thamarasi selvi, xingchen chu, Object oriented Programming with java, Tata McGraw Hill education private limited                            |
| Ref 6                   | Zak Ruvalcaba Anne Boehm, "Murach's HTML5 and CSS3", 3rdEdition, Murachs/Shroff Publishers & Distributors Pvt Ltd, 2016. (ISBN:978-9352133246)                |

## **COURSE PREREQUISITES**

| <b>Course Code</b>   | <b>Course Name</b>                 | <b>Description</b>                                                               | <b>Sem</b> |
|----------------------|------------------------------------|----------------------------------------------------------------------------------|------------|
| 17PCD23              | Programming in C & Data Structures | Basics of C Programming                                                          | 2          |
| Bridge Course on C++ | Object Oriented Concepts           | Basics of C++ , Classes and Objects, Inheritance, Polymorphism and Encapsulation | 4          |

## **COURSE OBJECTIVES**

| <b>SL No</b> | <b>Course Objectives</b>                                                                                                         |
|--------------|----------------------------------------------------------------------------------------------------------------------------------|
| 1            | Define HTML and CSS syntax and semantics to build web pages.                                                                     |
| 2            | Understand the concepts of Construct, visually format tables and forms using HTML using CSS.                                     |
| 3            | Develop Client-Side Scripts using JavaScript and Server-Side Scripts using PHP to generate and display the contents dynamically. |
| 4            | List the principles of object-oriented development using PHP.                                                                    |
| 5            | Illustrate JavaScript frameworks like jQuery and Backbone which facilitates developers to focus on core features.                |

## **COURSE OUTCOMES**

| <b>CO No.</b> | <b>On completion of this course, students will be able to:</b>                                                 | <b>RBT Level / Cognitive Level</b> |
|---------------|----------------------------------------------------------------------------------------------------------------|------------------------------------|
| 17CS71.1      | Understand the concepts of HTML, CSS.                                                                          | L2<br>Understand                   |
| 17CS71.2      | Understand the concepts of JavaScript, PHP, jQuery, AJAX, XML, JSON.                                           | L2<br>Understand/Apply             |
| 17CS71.3      | Develop the web pages, client-side scripts using HTML, CSS, JavaScript.                                        | L3<br>Develop                      |
| 17CS71.4      | Develop object oriented, Server-Side Scripts using PHP to generate and display the contents dynamically.       | L3<br>Develop                      |
| 17CS71.5      | Inspect JavaScript frameworks like jQuery and Backbone which facilitates developers to focus on core features. | L4<br>Analyze                      |

## **CO-PO-PSO MAPPING**

| <b>CO No.</b> | <b>PO1</b> | <b>PO2</b> | <b>PO3</b> | <b>PO4</b> | <b>PO5</b> | <b>PO6</b> | <b>PO7</b> | <b>PO8</b> | <b>PO9</b> | <b>PO10</b> | <b>PO11</b> | <b>PO12</b> | <b>PSO1</b> | <b>PSO2</b> | <b>PSO3</b> |
|---------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 17CS71.1      | 1          | -          | 2          | -          | -          | -          | -          | -          | -          | -           | -           | 2           | 2           | -           | -           |
| 17CS71.2      | 1          | -          | 2          | -          | -          | -          | -          | -          | -          | -           | -           | 2           | 2           | -           | -           |
| 17CS71.3      | 1          | -          | 2          | -          | -          | -          | -          | -          | -          | -           | -           | 2           | 2           | -           | -           |
| 17CS71.4      | 1          | -          | 2          | -          | -          | -          | -          | -          | -          | -           | -           | 2           | 2           | -           | -           |
| 17CS71.5      | 1          | -          | 2          | -          | -          | -          | -          | -          | -          | -           | -           | 2           | 2           | -           | -           |
| <b>17CS71</b> | <b>1.0</b> | <b>-</b>   | <b>2.0</b> | <b>-</b>   | <b>-</b>   | <b>-</b>   | <b>-</b>   | <b>-</b>   | <b>-</b>   | <b>-</b>    | <b>-</b>    | <b>2.0</b>  | <b>2.0</b>  | <b>-</b>    | <b>-</b>    |

## **CO-PO-PSO JUSTIFICATION**

| <b>CO No.</b> | <b>PO/PSO</b> | <b>CL</b> | <b>Justification</b>                                                                                                                                                  |
|---------------|---------------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 15CS71.1      | PO1           | 1         | Highly mapped as the students need the knowledge of basic HTML and CSS syntax and semantics to build web pages.                                                       |
|               | PO3           | 2         | Moderately mapped as the students to develop the basics using html programs.                                                                                          |
|               | PO12          | 2         | Moderately mapped as students the use of concepts in writing the HTML programs to build web pages.                                                                    |
|               | PSO1          | 2         | Moderately mapped as students understand and use systems software packages                                                                                            |
| 15CS71.2      | PO1           | 1         | Highly mapped as the students to build web pages, construct and visually format tables and forms using HTML and CSS                                                   |
|               | PO3           | 2         | Moderately mapped as the students to develop the tables using html programs and CSS Sheets.                                                                           |
|               | PO12          | 2         | Moderately mapped as the students need the knowledge of basic HTML and CSS syntax and semantics to build web pages                                                    |
|               | PSO1          | 2         | Moderately mapped as students the use of concepts in writing the HTML and CSS programs to build web pages                                                             |
| 15CS71.3      | PO1           | 1         | Highly mapped as the students to build Client-Side Scripts using JavaScript and Server-Side Scripts - PHP                                                             |
|               | PO3           | 2         | Moderately mapped as the students to develop Client-Side Scripts using JavaScript and Server-Side Scripts using PHP to generate and display the contents dynamically. |

|          |      |   |                                                                                                                                                    |
|----------|------|---|----------------------------------------------------------------------------------------------------------------------------------------------------|
|          | PO12 | 2 | Moderately mapped as the students need the knowledge of basic HTML and CSS syntax and semantics to build web pages                                 |
|          | PSO1 | 2 | Moderately mapped as students to use the toolkit of XAMP to develop Client-Side Scripts in PHP.                                                    |
| 15CS71.4 | PO1  | 1 | Highly mapped as the students to build web pages, construct and using PHP                                                                          |
|          | PO3  | 2 | Moderately mapped as the students to develop the PHP for Server-side Scripting.                                                                    |
|          | PO12 | 2 | Moderately mapped as the students to build web pages using PHP.                                                                                    |
|          | PSO1 | 2 | Moderately mapped as the students use the toolkit of XAMP to develop principles of object-oriented development using PHP.                          |
| 15CS71.5 | PO1  | 1 | Highly mapped as the students to build JavaScript frameworks                                                                                       |
|          | PO3  | 2 | Moderately mapped as the students to develop jQuery and Backbone which facilitates developer to focus on core features.                            |
|          | PO12 | 2 | Moderately mapped as the students to design and develop web pages using frameworks.                                                                |
|          | PSO1 | 2 | Moderately mapped as the students develop to use the toolkit of XAMP to jQuery and Backbone which facilitates developer to focus on core features. |

### **GAPS IN THE SYLLABUS TO MEET INDUSTRY/PROFESSIONAL REQUIREMENTS:**

| SL No. | Description                                                                        | Proposed Action |
|--------|------------------------------------------------------------------------------------|-----------------|
| 1      | Practical Exposure to concepts of HTML, PHP, JS and Simple Web Laboratory programs | Lab Session     |

### **TOPICS BEYOND SYLLABUS/ADVANCED TOPICS/DESIGN:**

| SL No. | Description                                                                                          |
|--------|------------------------------------------------------------------------------------------------------|
| 1      | Practical Exposure to concepts of HTML, PHP, JS, and Simple Web Laboratory programs using XAMP Tools |
| 2      | Developing Simple Application using HMTL, JS using Notepad Editor,                                   |

### **WEB SOURCE REFERENCES:**

| SL No. | Web References                                                                                                                          |
|--------|-----------------------------------------------------------------------------------------------------------------------------------------|
| 1      | <a href="https://www.javatpoint.com/Html-tutorial">https://www.javatpoint.com/Html-tutorial</a>                                         |
| 2      | <a href="https://www.w3schools.com/html/html_intro.asp">https://www.w3schools.com/html/html_intro.asp</a>                               |
| 3      | <a href="https://www.halvorsen.blog/documents/programming/web/web.php">https://www.halvorsen.blog/documents/programming/web/web.php</a> |

**DELIVERY / INSTRUCTIONAL METHODOLOGIES:**

| <b>SL No.</b> | <b>Delivery Methodology</b>    | <b>Tick Appropriate</b> |
|---------------|--------------------------------|-------------------------|
| 1             | Chalk and Talk                 | ✓                       |
| 2             | Student Assignment             | ✓                       |
| 3             | Student Seminar                | -                       |
| 4             | LCD Projectors / Smart Boards  | ✓                       |
| 5             | Student Project / Lab Sessions | ✓                       |
| 6             | Additional Courses             | ✓                       |

**ASSESSMENT METHODOLOGIES: DIRECT**

| <b>SL No.</b> | <b>Assessment Methodology</b>                                    | <b>Tick Appropriate</b> |
|---------------|------------------------------------------------------------------|-------------------------|
| 1             | Assignment                                                       | ✓                       |
| 2             | Internal Assessment / Model Exams                                | ✓                       |
| 3             | Student Seminar                                                  | -                       |
| 4             | University Exams                                                 | ✓                       |
| 5             | Student Lab Practices                                            | ✓                       |
| 6             | Student Mini / Major Projects                                    | ✓                       |
| 7             | Certification Courses / Online Test / Quiz (MOOC /NPTEL/ Others) | -                       |
| 8             | Add-on Courses                                                   | -                       |
| 9             | Others (If any)                                                  | -                       |

**ASSESSMENT METHODOLOGIES: INDIRECT**

| <b>SL No.</b> | <b>Assessment Methodology</b>                         | <b>Tick Appropriate</b> |
|---------------|-------------------------------------------------------|-------------------------|
| 1             | Assessment of Course Outcomes (Course Feedback)       | ✓                       |
| 2             | Student Feedback on Faculty (Twice)                   | ✓                       |
| 3             | Assessment of Student Mini / Major Project by Experts | ✓                       |
| 4             | Others                                                | -                       |

**Prepared by:****Approved by:**

**(S SUMA)**

**(H.o.D)**