INSTITUTE	**FACULTY OF TECHNOLOGY**
PROGRAM	**BACHELOR OF TECHNOLOGY (COMPUTER ENGINEERING)**
SEMESTER	**3**
COURSE TITLE	**WEB TECHNOLOGY**
COURSE CODE	**01CE0306**
COURSE CREDITS	**4**

Objective:

1 The increasing use of Internet and WWW encourages everyone to use web-based solutions for their requirements. Web technology refers to the methods by which End-user devices like computers/mobiles communicate with each other. This communication involves the use of web publishing languages like HTML5, CSS3, Bootstrap, XML and JavaScript This subject will attempt to give you a basic understanding of various aspects of web technologies.

Course Outcomes: After completion of this course, student will be able to:

1 Understand various web servers and HTTP request-response method. (Understand)

2 Select various HTML 4, HTML 5 and CSS 3 tags to create an interactive pages. (Apply)

3 Develop responsive webpages using Bootstrap. (Create)

4 Categorise various XML components to structurize data. (Analyze)

5 Use JavaScript to manipulate static webpages and perform various events and effects with DOM structure. (Evaluate)

Pre-requisite of course:NA

Teaching and Examination Scheme

Theory Hours	Tutorial Hours	Practical Hours	ESE	IA	CSE	Viva	Term Work
3	0	2	50	30	20	25	25

Contents : Unit	Topics	Contact Hours
1	**Introduction to Web and HTML** Introduction to Web Servers, HTTP request and Response Model, Structure of HTML, Doctypes in HTML, HTML Tags, Elements and attributes, HTML 5: HTML 5 Layout and syntax,, Attributes, Events,, Web forms and validations, Audio & Video, SVG	7

MR. HARDIK AJAYBHAI DOSHI
Digitally signed by (Name of HOD)

DR. RAJENDRASINH BAHADURSINH JADEJA
Digitally signed by (Name of Dean/ Principal)

Contents : Unit	Topics	Contact Hours
2	**CSS3** Introduction, Selectors (basic, pseudo class, pseudo element), Box Model, Backgrounds and Borders, Text Effects, 2D/3D Transformations, Transitions, Images, Positioning, Animations, Flex, Multiple Column Layout, Media Queries, User Interface	8
3	**Bootstrap** Media Object, Grid Layouts, Typography, Buttons, Input Elements, Jumbotron, Cards and Navigation, Breadcrumb, List Groups, Progress Bars, Tool Tips, Pagination, Modals, Collapse, Accordion, Carousel	6
4	**XML** Introduction to XML, uses of XML, simple XML, XML key components, DTD and Schemas, Transforming XML using XSL and XSLT, XML AJAX, XML DOM	8
5	**JavaScript and HTML 5 APIs** JS Syntax, variable, string, loops and control, Functions, Events, Array, Date, Type conversions, this,, arrow, JS validation, JS class and object, DOM, JS Graphics, JSON, JS AJAX, Web Storage, Canvas, Geo-location, Drag & drop, Web Workers, Indexed DB, Web CORS	13
Total Hours		**42**

Suggested List of Experiments:

Contents : Unit	Topics	Contact Hours
1	**Practical 1** Analysis and Configuration of Client Server architecture and HTTP protocol.	2
2	**Practical 2** Perform following basic HTML practical. a. Print a paragraph that is a description of a book, include the title of the book as well as its author. Names and titles should be underlined, adjectives should be italicized and bolded. Each paragraph lines must be of different color and fonts. b. Create five different links that open at various parts of webpages. c. Create Photo gallery which includes images from various level of folders also apply various image attributes. d. Perform various types of list as mentioned below. 1. Create ordered list for various departments of Marwadi University. 2. Create Unordered list for semesters in Computer Engineering Branch. 3. Create Nested list for semester vise subjects 4. Create Definition list for Subject description.	2
3	**Practical 3** Create a CV or Resume using HTML for a post of software developer.	2
4	**Practical 4** Create a Time-Table using HTML Table tags of your respective division.	2

Suggested List of Experiments:

Contents : Unit	Topics	Contact Hours
5	**Practical 5** Perform following HTML 5 practical. a. Create web page which display audio and video gallery. b. Create various shapes using SVG. c. Apply transformation while rendering text on web pages using SVG d. Create HTML 5 form with validation.	2
6	**Practical 6** Perform the following CSS programs. a. Demonstrate the various CSS selectors with styling on a paragraph. b. Apply various background and border effects to create image gallery. c. Apply 2D/3D Transformations on various shapes.	2
7	**Practical 7** a. Using HTML, CSS create a bouncing loader animation. b. Create photo gallery with CSS Flex. c. Apply Flex property on flex container and flex child.	2
8	**Practical 8** Create a static web page of your college which includes information regarding Vision, Mission, and Program specific outcomes, Courses Offered, Top Recruiters using HTML and CSS only.	2
9	**Practical 9** Create a responsive web page of your college which includes information regarding Vision, Mission, and Program specific outcomes, Courses Offered, Image gallery of events, Top Recruiters using Bootstrap only.	2
10	**Practical 10** Perform following JS programs. a. Apply string formatting and manipulation function on a string input. b. Create a calculator which perform addition, multiplication, division and subtraction, Display the output using popup box. c. Write a JavaScript program to display the current day and time in the following format.	2
11	**Practical 11** Perform following JS Events. a. If the mouse is over heading, change font color to “red” and if the mouse goes out of the heading change it to “black”. b. If key pressed is a, e, i, o, u the message should be displayed on pop up box that “vowel is pressed”, also display the key code of key pressed. c. Perform onload(), onerror() and onresize() event on window.	2
12	**Practical 12** Perform following JS Events. a. If the mouse is over heading, change font color to “red” and if the mouse goes out of the heading change it to “black”. b. If key pressed is a, e, i, o, u the message should be displayed on pop up box that “vowel is pressed”, also display the key code of key pressed. c. Perform onload(), onerror() and onresize() event on window.	2
13	**Practical 13** a. Develop a Web Page to parse the data using JSON b. Write a program to locate user’s location using HTML5 API. c. Write a program to store data on user’s browser using HTML5 API.	2

Suggested List of Experiments:

Contents : Unit	Topics	Contact Hours
14	**Practical 14** a. To Design an XML document to store information about a student in an engineering college affiliated to MU. The information must include RollNo, Name, Name of the College, Branch, Year of Joining, and e- mail id. Make up sample data for 5 students. Create a CSS style sheet and use it to display the document. b. Create an XMLHttpRequest to retrieve data from an XML file and display the data in an HTML table.	2
Total Hours		**28**

Textbook :

1 Hart-Davis, HTML, XHTML & CSS QuickSteps, Guy Hart-Davis,, Tata McGraw Hill Edition, 2012

References:

1 Front-End Web Development: The Big Nerd Ranch Guide (Big Nerd Ranch Guides), Front -End Web Development: The Big Nerd Ranch Guide (Big Nerd Ranch Guides), Chris Aquino and Todd Gandee, Pearson Technology Group., 2016

2 HTML 5 Black Book, HTML 5 Black Book, DT Editorial Services, Dreamtech Press, 2016

3 Programming in HTML5 with JavaScript and CSS3, Programming in HTML5 with JavaScript and CSS3, Glenn Johnson, Microsoft Press., 2013

4 Jake, Bootstrap: Responsive Web development, Jake, Bootstrap: Responsive Web development, Spurlock Jake, O'Reilly Media, 2013

Suggested Theory Distribution:

The suggested theory distribution as per Bloom’s taxonomy is as follows. This distribution serves as guidelines for teachers and students to achieve effective teaching-learning process

Distribution of Theory for course delivery and evaluation					
Remember / Knowledge	**Understand**	**Apply**	**Analyze**	**Evaluate**	**Higher order Thinking**
0.00	20.00	25.00	25.00	25.00	5.00

Instructional Method:

1 The course delivery method will depend upon the requirement of content and need of students. The teacher in addition to conventional teaching method by black board, may also use any of tools such as demonstration, role play, Quiz, brainstorming, MOOCs etc.

2 The internal evaluation will be done on the basis of continuous evaluation of students in the laboratory and class-room.

3 Practical examination will be conducted at the end of semester for evaluation of performance of students in laboratory.

4 Students will use supplementary resources such as online videos, NPTEL videos, e-courses, Virtual Laboratory.

MR. HARDIK AJAYBHAI DOSHI
Digitally signed by (Name of HOD)

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Supplementary Resources:

1. https://www.w3schools.com/html/default.asp
2. https://www.w3schools.com/css/default.asp
3. https://www.w3schools.com/js/default.asp
4. https://developer.mozilla.org/en-US/docs/Web/HTML
5. https://developer.mozilla.org/en-US/docs/Web/CSS
6. https://developer.mozilla.org/en-US/docs/Web/JavaScript
7. https://www.tutorialspoint.com/javascript/index.htm
8. https://www.tutorialspoint.com/html5/index.htm
9. https://www.tutorialspoint.com/css/css3_tutorial.htm
10. https://getbootstrap.com/

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