COURSE TITLE	**WEB DEVELOPMENT TECHNOLOGY**
COURSE CODE	**01CC0402**
COURSE CREDITS	**4**

Objective:

1 The increasing use of Internet and WWW encourages everyone to use webbased 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 development technologies such as HTML5, CSS3, Bootstrap, Tailwind CSS, GitHub, 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 Design and develop interactive web pages using HTML5, identifying the correct use of attributes, incorporating multimedia elements and form validations. (Apply)

2 Create visually appealing websites using CSS selectors, backgrounds, text effects, animations and other CSS properties. (Create)

3 Develop responsive web pages using Bootstrap and analyze Git workflows to manage deployments and resolve version control issues effectively. (Analyse)

4 Apply Tailwind CSS for a scalable, utility-first approach to web design. (Apply)

5 Evaluate and debug JavaScript code to manipulate static webpages and implement event-driven effects using the 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 HTML 5	8
2	**CSS3** Introduction, Selectors (basic, pseudo class, pseudo element),, Box Model, Backgrounds and Borders, Text Effects, 2D/3D Transformations, Transitions, Images, Positioning, Animations, Flex-Box, Multiple Column Layout, Media Queries, CSS Variables	8

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Contents : Unit	Topics	Contact Hours
3	**Bootstrap** Media Object, Grid Layouts, Typography, Buttons, Input Elements, Cards and Navigation, List Groups, Progress Bars, Tool Tips, Pagination, Modals, Collapse, Accordion, Carousel	6
4	**Tailwind CSS** Introduction, Tailwind CSS layout, Tailwind CSS Flexbox, Tailwind CSS Grid, Tailwind CSS Typography, Tailwind CSS Background,, Tailwind CSS Border, Tailwind CSS Transition and Transformation	7
5	**Version Control and Web Hosting Basics** Introduction to Version Control Systems, Git Basics, Essential Git Commands, Working with GitHub, Advanced Git and GitHub Features, Web Hosting Basics, Static Site Hosting with GitHub Pages	5
6	**JavaScript** JS Syntax, Variable, String, Loops and Control, Operators, Functions, Events, Array, Date, Type conversions, this, arrow,, JS validation, JS class and object, DOM, JSON, JS AJAX	8
Total Hours		**42**

Suggested List of Experiments:

Contents : Unit	Topics	Contact Hours
1	**Practical 1** Create a Time-Table using HTML Table tags of your respective division.	2
2	**Practical 2** Design Form of Student Registration and Employee registration with different fields.	2
3	**Practical 3** Design the different web page using div tag and CSS properties.	2
4	**Practical 4** Create a static web page of your college which includes information regarding Vision, Mission, Program specific outcomes, Courses Offered, Top Recruiters using HTML and CSS only.	2
5	**Practical 5** Build a personal portfolio webpage using HTML and CSS and make it responsive using Media Query.	2
6	**Practical 6** Write HTML, Bootstrap code to design a web page image.	2
7	**Practical 7** Design Sample SIGN-IN form using Bootstrap.	2

Suggested List of Experiments:

Contents : Unit	Topics	Contact Hours
8	**Practical 8** Create a responsive web page of your college which includes information regarding Vision, Mission, Program specific outcomes, Courses Offered, Image gallery of events, Top Recruiters using Bootstrap only.	2
9	**Practical 9** Design Checkout form using Bootstrap.	2
10	**Practical 10** Create an interactive product listing card which consist of Product image, Product Name and price and Add to Cart button.	2
11	**Practical 11** Design Navigation bar with dropdown using Tailwind CSS.	2
12	**Practical 12** Publish your college webpage (Lab 4 OR Lab 8) using GitHub Pages.	2
13	**Practical 13** Create a HTML form that accept the student data like enrollment number, name, email id, password, confirm password, phone number, address, gender, choices of branch and perform client-side validation using JavaScript.	2
14	**Practical 14** Create a quiz application that displays one question at a time. Track the user's score and show the final result at the end.	2
Total Hours		**28**

Textbook :

1 HTML 5, Black Book, dreamtech Press, 2011

References:

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

2 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

3 Responsive Web development, Responsive Web development, Spurlock Jake, Bootstrap, O'Reilly Media, Inc, 2011

4 HTML, XHTML & CSS QuickSteps, HTML, XHTML & CSS QuickSteps, Guy Hart-Davis, Tata McGraw Hill Edition, 2009

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

Remember / Knowledge	Understand	Apply	Analyze	Evaluate	Higher order Thinking / Creative
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.

Supplementary Resources:

1. https://www.w3schools.com/html/default.asp b) https://www.w3schools.com/css/default.asp
2. https://www.w3schools.com/js/default.asp
3. https://developer.mozilla.org/en-US/docs/Web/HTML
4. https://developer.mozilla.org/en-US/docs/Web/CSS
5. https://developer.mozilla.org/en-US/docs/Web/JavaScript g) https://www.tutorialspoint.com/javascript/index.htm
6. h) https://www.tutorialspoint.com/html5/index.htm
7. https://getbootstrap.com/
8. https://www.w3schools.com/git/default.asp?remote=github
9. https://tailwindcss.com/