Course Code: CSE 2022	**Course Name: Web Programming**	
Credits: 2 (1-0-2)	**Contact Hours: 1** hour Theory & 2 hours lab per week	
Batch: 2024, 3nd Sem **Academic Year:** 2025-26	**Semester Duration:** 28 July 2024 to 28 Nov 2025	
Course Faculty: **Name:** Dr. Kiran Khatter **Email:** kiran.khatter@bmu.edu.in **Contact No:** 9899960660 **Office:** 62, IV Floor, E2 Building **Name:** Mr. Sachin Wariyal **Email:** sachinwariyal4@gmail.com **Contact No:**9758120959 **Name:** Mr. Navyum **Email:** navyum12@gmail.com **Contact No:** 8708335298	**Course Coordinator:** Dr. Kiran Khatter **Email:** kiran.khatter@bmu.edu.in **Contact No:** 9899960660 **Office:** 62, IV Floor, E2 Building	

Aim of the course:

This course aims to introduce modern web development using JavaScript. In addition to exploring the basics of web page creation using HTML and CSS, this course will familiarize students with how browsers represent webpage data using the Document Object Model (DOM) and how to develop dynamic, interactive web pages using JavaScript in the browser.

Course Overview and Context:

This course will cover JavaScript technologies that power a modern full-stack development workflow, including server-side scripting, single-page web applications with MVC structure, package management, and JSON data storage. The students will learn server-side JavaScript with web frameworks such as Node.js making it simple to create and deploy complex, data-driven web applications.

Course Outcomes (CO): At the end of the course the students should be able to do the following:

	Course Outcome Statement	**Mapped Component**	**Associated Activities / Assessment**
CO1	Apply various core scripting modules to build a server	Employability	→ Theory sessions on HTML, CSS, and JavaScript fundamentals, including syntax, conditionals, functions, and DOM manipulation. → In-class demonstrations of JavaScript structures, object manipulation, event handling, and JSON. → Assessment through Project Phase Evaluation 1 (HTML/CSS fundamentals, layout, styling, accessibility) and Phase Evaluation 2 (JavaScript logic and DOM interaction).
CO2	Design single-page applications, create interactive and dynamic websites	Entrepreneurship, Skill Development	→ Hands-on coding exercises integrating HTML, CSS, and JavaScript for responsive UI and event-driven behavior. → Server-side scripting with Node.js and Express.js, dynamic content rendering using template engines like Handlebars.

			→ Backend integration with MongoDB using Mongoose for data handling. → Evaluated through the final project phase covering full-stack integration and real-time data interaction.

Prerequisite: if any

- HTML
- Basic knowledge of computer programming (variables, functions, control flow)

Topics of the course:

Topics	No of Sessions	CO
Introduction to CSS, Basic selectors, Formatting, integrating CSS, In-line Styles, Embedded Style sheets, Imported Style Sheet, Classes	4 (2 Th + 2 Lab)	CO1
JavaScript: Data Types, Primitive Types, Statements, Keywords, Operators, JavaScript Conditional Statements Function Parameters, Function Return Types, Arrays	7 (3 Th + 4 Lab)	CO1
JavaScript Objects, Window Objects, Document Object, Object Creation, Adding Methods of Objects, JavaScript Loops & Iteration,	7 (3 Th + 4 Lab)	CO1, CO2
Adding Properties of Objects, Event Handling, Enumerating Properties, Callbacks, JSON	7 (3 Th + 4 Lab)	CO2
Building scalable Web Apps with Server-Side JavaScript: generating dynamic content on the server using Node.js (creating the HTTP server, handlebars, template engines) ; storing and retrieving data in MongoDB	7 (5 Th + 2 Lab)	CO2

CO/PO Mapping:

CO/PO Mapping	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
CO1	1	2	1		1								1		2	
CO2			1	1	2	2	2							2		1

Learning Resources:

Textbooks / Key References:

- Flanagan, D. (2020). JavaScript: The Definitive Guide. O'Reilly Media.
- DuRocher, D. (2021). HTML & CSS QuickStart Guide: The Simplified Beginners Guide to Developing a Strong Coding Foundation, Building Responsive Websites, and Mastering the Fundamentals of Modern Web Design. ClydeBank Media LLC.

Reference Links:

Due to the ever-changing nature of the web, current material that is freely available will be relied upon, including software documentation, blog posts, tutorials, and more. Links to the readings will be provided on a weekly basis in addition to the following online course:
https://www.coursera.org/learn/html-css-javascript-for-web-developers

Experiential Learning Component (45 %):

The Experiential Learning Component of the Web Programming course (CSE2022) is designed to provide students with hands-on experiences that reinforce theoretical knowledge through practical application. Throughout the course, students will engage in project-based learning where they will be assigned practical projects that evolve from basic HTML/CSS to advanced JavaScript and Node.js applications. These projects, which span the entirety of the course, are structured into phase-wise evaluations to ensure consistent application and progression of skills. The first project phase evaluation, scheduled for the week starting 16th September with a weightage of 30%, focuses on the fundamentals of HTML and CSS, assessing students on design layout, HTML structure, CSS styling, and accessibility standards. The second project phase, starting the week of 4th November and weighted at 30%, emphasizes the integration of HTML, CSS, and JavaScript concepts, including syntax, DOM manipulation, event handling, and cohesive project integration.

Assessment Pattern: The final grade will be determined by the marks or grades earned during the project's phase-wise evaluations and the end-term assessment. Grading will be conducted using the relative grading method outlined in the university's academic regulations. To be eligible for grading, students must achieve a minimum of 40% of the total marks upon completing all assessments listed in the table below:

Evaluation Component	Weightage (%)	Evaluation Schedule	Focus & Rubrics
Project Phase Evaluation 1	30%	Week starting from **16th September**	**Focus**: Knowledge and application of HTML and CSS fundamentals – Design Layout and Flow of Website (**5%**) *(evaluated after 3 weeks)* – Understanding of HTML Structure (**10%**) – CSS Styling (**10%**) – Accessibility (web standards) (**5%**)
Project Phase Evaluation 2	30%	Week starting from **4th November**	**Focus**: Integration of HTML, CSS, and JavaScript – JavaScript Syntax and Concepts (**10%**) – DOM Manipulation (**10%**) – Event Handling (**5%**) – HTML, CSS, and JS Integration (**5%**)
End Term Evaluation	40%	As per **Academic Calendar/Datesheet**	**Focus**: Full-stack integration (HTML, CSS, JS, Node.js, Express.js, MongoDB) – Frontend-Backend Data Flow (15%) – Node.js/Express Setup (**10%**) – Template Engines & Static Files (**5%**) – MongoDB Operations via Mongoose or ODM (**5%**) – Innovation & Usability (**5%**)
Additional Guidelines	—	—	— **All evaluations** will be based on student-submitted work, live Q&A, or coding tasks.

			— **Plagiarism and AI-generated code** will be reported under the university's **Unfair Means (UFM)** policy. — **Final project submission is mandatory on a public GitHub repository.**

Student Responsibilities:

- Attend lectures and do the work Lab Assignments as per instructions.
- Participate in the discussions/assignments held during classes.
- Check announcements on the LMS and emails regularly.
- Submit the assigned task on time.
- Regularly check marks on the LMS to ensure they are up to date.
- Participate in class and take necessary actions to grasp the material. Asking questions is encouraged.
- Communicate any concerns by speaking directly with the instructor.

Attendance Policy: Students are expected to attend classes regularly. Failure to follow the classes regularly and adhere to the expected attendance percentage will result in losing quiz/lab marks and a reduction of the grade as per the University's grading policy.

Recourse Examination Policy: In case a student fails the course, a one-time recourse is permitted as per the academic regulations of the University. Recourse is allowed only for the End Semester examination.

Make-up policy: No make-up exam will be conducted for unexcused absences. The faculty needs to be informed in advance in case the student is not going to appear for any evaluation component, and it is at the discretion of the faculty to sanction makeup for an evaluation component.

Behavior Expectations: No mobile phones and other distractive gadgets are permitted in the class.

Academic Dishonesty/Cheating/Plagiarism: Plagiarism and dishonesty in any form in any evaluation component will lead to appropriate disciplinary action.