K L Deemed to be University
CSE-1 -- KLVZA
Course Handout
2025-2026, Odd Sem

Course Title	:FRONT END DEVELOPMENT FRAMEWORKS
Course Code	:24SDCS01E
L-T-P-S Structure	: 2-1-0-4
Pre-requisite	:
Credits	: 4
Course Coordinator	:Deepak V
Team of Instructors	:
Teaching Associates	:

Syllabus :SYLLABUS: Git, Version Control, and Introduction to HTML/CSS Introduction to Git and Version Control Systems, Installing Git and Initial Setup, Git Basics (git init, git add, git commit), Understanding Git Workflow, Branching and Merging, Working with Remote Repositories (git clone, git pull, git push), Resolving Merge Conflicts, Git Logs and Viewing History, Git Reset, Revert, and Checkout, Creating and Managing Branches, Basic Git Commands for Daily Use, Introduction to HTML5 structure, Semantic HTML5 tags, Forms and input types, Media elements (audio, video, images), CSS syntax and selectors, Introduction to responsive web design concepts. Advanced HTML5, CSS3, and Core JavaScript Advanced HTML5 elements (section, aside, nav, header, footer), HTML5 form enhancements (placeholder, required, autofocus, pattern), CSS positioning (static, relative, absolute, fixed, sticky), CSS media types and feature queries, CSS transitions and keyframe animations, Introduction to JavaScript, JavaScript syntax and data types, operators, functions and arrow functions, conditional statements and loops, objects, arrays, set and maps, DOM manipulation, event handling, ES6+ features (let, const, destructuring, spread/rest operators), promises and async/await, fetch API, form validation, error handling, localStorage and sessionStorage, modular JavaScript, classes and objects, Built In Objects, working with JSON. React Fundamentals and UI Development Introduction to React, JSX syntax and expressions, functional components, props and state management, event handling in React, conditional rendering, list rendering and keys, useEffect and useState hooks, component lifecycle overview, forms and controlled components, React Router for navigation, lifting state up, component communication, structure of React apps, reusable components and atomic design principles, state management using Redux Toolkit, UI libraries like Material UI and Tailwind CSS, deployment using Vite. Advanced React and Working with Node.js/Express Context API for global state management, hooks for reusable logic, lazy loading and code splitting for performance, testing with React Testing Library, introduction to Node.js (event loop, non-blocking I/O), setting up a Node.js project with npm, building a simple server with core modules (http), introduction to Express.js (setup, routing), creating RESTful endpoints (GET, POST), middleware basics, input validation and sanitization. Development with Next.js and MongoDB Introduction to Next.js and differences with React, file-based routing, static generation (SSG) and server-side rendering (SSR), dynamic routing and API routes, getStaticProps and getServerSideProps, image optimization and built-in support for SEO, middleware and authentication using NextAuth.js, integration with MongoDB with all the insert, delete & update operations.

MOOCS :1. Introduction to HTML, CSS, & JavaScript - https://www.coursera.org/learn/introduction-html-css-javascript 2. Developing Front-End Apps with React - https://www.coursera.org/learn/developing-frontend-apps-with-react 3. Developing Back-End Apps with Node.js and Express - https://www.coursera.org/learn/developing-backend-apps-with-nodejs-and-express 4. Introduction to Next.js - https://www.coursera.org/learn/introduction-to-next-js?source=search 5. Git for beginners with Hands-on Labs - https://www.coursera.org/learn/git-for-beginners/ 6. Learn React - https://www.codecademy.com/learn/react-101 https://edube.org/study/jse1 [JSA Certification Related] https://edube.org/study/jse2 [JSA Certification Related]

Global Certifications :JSA™ – Certified Associate JavaScript Programmer Certification - https://js.institute/jsa-certification

COURSE OUTCOMES (COs):

CO NO	Course Outcome (CO)	PO/PSO	Blooms Taxonomy Level (BTL)
CO1	Git, Version Control, and Introduction to HTML/CSS	PSO1,PO1	3
CO2	Advanced HTML5, CSS3, and Core JavaScript	PSO1,PO1	3
CO3	React Fundamentals and UI Development	PSO1,PO1,PO2	3
CO4	Advanced React, Testing, and Backend with Node.js/Express	PSO1,PO1	3

COURSE OUTCOME INDICATORS (COIs)::

Outcome No.	Highest BTL	COI-3
CO1	3	**Btl-3** Design forms and incorporate media using HTML5 and CSS
CO2	3	**Btl-3** Apply JavaScript to implement interactive client-side logic
CO3	3	**Btl-3** Build multi-page applications with React Router
CO4	3	**Btl-3** Create secure RESTful APIs with input validation and routing

PROGRAM OUTCOMES & PROGRAM SPECIFIC OUTCOMES (POs/PSOs)

Po No.	Program Outcome
PSO1	An ability to design and develop software projects as well as Analyze and test user requirements.
PO1	Engineering Knowledge:Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
PO2	Problem Analysis: Identify, formulate, review research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences

Lecture Course DELIVERY Plan:

Sess.No.	CO	COI	Topic	Book No[CH No] [Page No]	Teaching-Learning Methods	EvaluationComponents
1	CO1	COI-3	Introduction to Git and Version Control Systems	1	Chalk,LTC,PPT,Talk	Continuous Evaluation - Project,Global-Certification,Hackathon-Final Review,MOOCs Review,Skill In-Sem

Sess.No.	CO	COI	Topic	Book No[CH No] [Page No]	Teaching-Learning Methods	EvaluationComponents
						Exam,Skill Sem-End Exam,Skilling Continuous Evaluation
2	CO1	COI-3	Git Workflow, Branching, Merging, and Remote Repositories	1	Chalk,LTC,PPT,Talk	Continuous Evaluation - Project,Global-Certification,Hackathon-Final Review,MOOCs Review,Skill In-Sem Exam,Skill Sem-End Exam,Skilling Continuous Evaluation
3	CO1	COI-3	HTML5 Structure, Semantic Tags, and Forms	1	Chalk,LTC,PPT,Talk	Continuous Evaluation - Project,Skilling Continuous Evaluation
4	CO2	COI-3	CSS Syntax, Selectors, and Responsive Web Design	1	Chalk,LTC,PPT,Talk	Continuous Evaluation - Project,Global-Certification,Hackathon-Final Review,MOOCs Review,Skill In-Sem Exam,Skill Sem-End Exam,Skilling Continuous Evaluation
5	CO2	COI-3	Advanced HTML5 Elements and CSS Positioning Techniques	1	Chalk,LTC,PPT,Talk	Continuous Evaluation - Project,MOOCs Review,Skilling Continuous Evaluation
6	CO2	COI-3	JavaScript Fundamentals: Syntax, Functions, and Control Structures	1	Chalk,LTC,PPT,Talk	Global-Certification,Hackathon-Final Review,MOOCs Review,Skill In-Sem Exam,Skill Sem-End Exam,Skilling Continuous Evaluation
7	CO3	COI-3	DOM Manipulation, Event Handling, and Form Validation	1	Chalk,LTC,PPT,Talk	Continuous Evaluation - Project,Global-Certification,Hackathon-Final Review,Skill In-Sem Exam,Skill Sem-End Exam,Skilling Continuous Evaluation
8	CO3	COI-3	ES6+ Features, Fetch API,	1	Chalk,LTC,PPT,Talk	Continuous Evaluation - Project,Global-

Sess.No.	CO	COI	Topic	Book No[CH No] [Page No]	Teaching-Learning Methods	EvaluationComponents
			and Local Storage Management			Certification,Hackathon-Final Review,MOOCs Review,Skill In-Sem Exam,Skill Sem-End Exam,Skilling Continuous Evaluation
9	CO3	COI-3	Introduction to React and Component-Based Architecture	1	Chalk,LTC,PPT,Talk	Continuous Evaluation - Project,Global-Certification,Hackathon-Final Review,MOOCs Review,Skill In-Sem Exam,Skill Sem-End Exam,Skilling Continuous Evaluation
10	CO4	COI-3	React Hooks, Routing, and State Management with Redux Toolkit	1	Chalk,LTC,PPT,Talk	Continuous Evaluation - Project,Global-Certification,Hackathon-Final Review,MOOCs Review,Skill In-Sem Exam,Skill Sem-End Exam,Skilling Continuous Evaluation
11	CO4	COI-3	Advanced React: Context API, Hooks, and Testing	1	Chalk,LTC,PPT,Talk	Continuous Evaluation - Project,Global-Certification,Hackathon-Final Review,MOOCs Review,Skill In-Sem Exam,Skill Sem-End Exam,Skilling Continuous Evaluation
12	CO4	COI-3	Backend Development with Node.js and Express.js	1	Chalk,LTC,PPT,Talk	Continuous Evaluation - Project,Global-Certification,Hackathon-Final Review,MOOCs Review,Skill In-Sem Exam,Skill Sem-End Exam,Skilling Continuous Evaluation
13	CO4	COI-3	Development with Next.js, MongoDB, and Capstone Project Integration	1	Chalk,LTC,PPT,Talk	Continuous Evaluation - Project,Global-Certification,Hackathon-Final Review,MOOCs Review,Skill In-Sem Exam,Skill Sem-End

Sess.No.	CO	COI	Topic	Book No[CH No] [Page No]	Teaching-Learning Methods	EvaluationComponents
						Exam,Skilling Continuous Evaluation

Lecture Session wise Teaching – Learning Plan

SESSION NUMBER : 1

Session Outcome: 1 Introduction to Git and Version Control Systems

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	PPT	--- NOT APPLICABLE ---
45	Introduction to Git and Version Control Systems	3	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 2

Session Outcome: 2 Introduction to Git and Version Control Systems

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	PPT	--- NOT APPLICABLE ---
45	Git Workflow, Branching, Merging, and Remote Repositories	3	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 3

Session Outcome: 4 HTML5 Structure, Semantic Tags, and Forms

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	PPT	--- NOT APPLICABLE ---
45	HTML5 Structure, Semantic Tags, and Forms	3	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 4

Session Outcome: 3 CSS Syntax, Selectors, and Responsive Web Design

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	PPT	--- NOT APPLICABLE ---
45	CSS Syntax, Selectors, and Responsive Web Design	3	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 5

Session Outcome: 5 Advanced HTML5 Elements and CSS Positioning Techniques

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
45	Advanced HTML5 Elements and CSS Positioning Techniques	3	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 6

Session Outcome: 2 JavaScript Fundamentals: Syntax, Functions, and Control Structures

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	PPT	--- NOT APPLICABLE ---
45	JavaScript Fundamentals: Syntax, Functions, and Control Structures	3	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 7

Session Outcome: 7 DOM Manipulation, Event Handling, and Form Validation

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	PPT	--- NOT APPLICABLE ---
45	DOM Manipulation, Event Handling, and Form Validation	3	PPT	--- NOT APPLICABLE

SESSION NUMBER : 8

Session Outcome: 8 ES6+ Features, Fetch API, and Local Storage Management

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
45	ES6+ Features, Fetch API, and Local Storage Management	3	PPT	--- NOT APPLICABLE ---
5	Attendance	1	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 9

Session Outcome: 9 Introduction to React and Component-Based Architecture

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
45	Introduction to React and Component-Based Architecture	3	PPT	--- NOT APPLICABLE ---
5	Attendance	1	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 10

Session Outcome: 10 React Hooks, Routing, and State Management with Redux Toolkit

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
45	React Hooks, Routing, and State Management with Redux Toolkit	1	PPT	--- NOT APPLICABLE ---
5	Attendance	1	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 11

Session Outcome: 1 Advanced React: Context API, Hooks, and Testing

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods

45	Advanced React: Context API, Hooks, and Testing	3	PPT	--- NOT APPLICABLE ---
5	Attendance	1	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 12

Session Outcome: 2 Backend Development with Node.js and Express.js

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
45	Backend Development with Node.js and Express.js	3	PPT	--- NOT APPLICABLE ---
5	Attendance	1	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 13

Session Outcome: 3 Development with Next.js, MongoDB, and Capstone Project Integration

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
45	Development with Next.js, MongoDB, and Capstone Project Integration	3	PPT	--- NOT APPLICABLE ---
5	Attendance	1	PPT	--- NOT APPLICABLE ---

Tutorial Course DELIVERY Plan:

List of Experiments supposed to finish in Open Lab Sessions:

Lab session no	List of Experiments	CO-Mapping
1	Introduction to Git and Version Control	CO1
2	Branching and Merging in Git	CO1
3	Working with Remote Repositories	CO1
4	Git Logs and Viewing History	CO2

Lab session no	List of Experiments	CO-Mapping
5	Git Reset, Revert, and Checkout	CO2
6	Basic HTML5 and Semantic Tags	CO2
7	Forms, Input Types, and Media Elements	CO3
8	CSS Syntax, Selectors, and Responsive Design	CO3
9	Advanced HTML5 and CSS3	CO3
10	CSS Transitions, Animations, and Media Queries	CO4
11	Introduction to JavaScript	CO4
12	Working with JavaScript Objects and Arrays	CO4
13	DOM Manipulation and Event Handling	CO4

Tutorial Session wise Teaching – Learning Plan

SESSION NUMBER : 1

Session Outcome: 1 Introduction to Git and Version Control

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	PPT	--- NOT APPLICABLE ---
45	Introduction to Git and Version Control	3	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 2

Session Outcome: 1 Branching and Merging in Git

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	PPT	--- NOT APPLICABLE ---

45	Branching and Merging in Git	3	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 3

Session Outcome: 2 Working with Remote Repositories

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	PPT	--- NOT APPLICABLE ---
45	Working with Remote Repositories	4	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 4

Session Outcome: 4 Git Logs and Viewing History

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	PPT	--- NOT APPLICABLE ---
45	Git Logs and Viewing History	3	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 5

Session Outcome: 5 Git Reset, Revert, and Checkout

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	PPT	--- NOT APPLICABLE ---
45	Git Reset, Revert, and Checkout	3	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 6

Session Outcome: 6 Basic HTML5 and Semantic Tags

Time(min)	Topic	BTL	Teaching-Learning	Active Learning

			Methods	Methods
5	Attendance	1	PPT	--- NOT APPLICABLE ---
45	Basic HTML5 and Semantic Tags	3	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 7

Session Outcome: 7 Forms, Input Types, and Media Elements

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	PPT	--- NOT APPLICABLE ---
45	Forms, Input Types, and Media Elements	3	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 8

Session Outcome: 8 CSS Syntax, Selectors, and Responsive Design

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	PPT	--- NOT APPLICABLE ---
45	CSS Syntax, Selectors, and Responsive Design	3	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 9

Session Outcome: 9 Advanced HTML5 and CSS3

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	PPT	--- NOT APPLICABLE ---
45	Advanced HTML5 and CSS3	3	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 10

Session Outcome: 10 CSS Transitions, Animations, and Media Queries

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	PPT	--- NOT APPLICABLE ---
45	CSS Transitions, Animations, and Media Queries	4	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 11

Session Outcome: 1 Introduction to JavaScript

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	PPT	--- NOT APPLICABLE ---
45	Introduction to JavaScript	3	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 12

Session Outcome: 2 Working with JavaScript Objects and Arrays

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	PPT	--- NOT APPLICABLE ---
45	Working with JavaScript Objects and Arrays	3	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 13

Session Outcome: 3 DOM Manipulation and Event Handling

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	PPT	--- NOT APPLICABLE ---
45	DOM Manipulation and Event Handling	3	PPT	--- NOT APPLICABLE

Practical Course DELIVERY Plan: NO Delivery Plan Exists

Practical Session wise Teaching – Learning Plan

No Session Plans Exists

Skilling Course DELIVERY Plan:

Skilling session no	Topics/Experiments	CO-Mapping
1	Install Git and Configure a Local Repository	CO1
2	Basic Git Commands and Git Workflow in Practice	CO1
3	Branching, Merging, and Conflict Resolution in Git	CO1
4	Working with Remote Repositories and GitHub	CO1
5	Git Reset, Revert, Logs, and Managing	CO1
6	Creating Structured Webpages with Semantic HTML5	CO1
7	Building HTML Forms with Input Types and Validation Attributes	CO2
8	Embedding Media Elements: Images, Audio, and Video in HTML	CO2
9	Styling Webpages with CSS Syntax, Selectors, and Properties	CO2
10	Designing Responsive Layouts with Media Queries and Flexbox	CO2
11	Advanced HTML5 Tags and Enhanced Form Functionalities	CO2
12	CSS Positioning and Animation with Keyframes and Transitions	CO2
13	JavaScript Basics: Syntax, Variables, Data Types, and Operators	CO3
14	Using Functions, Conditionals, and Loops in JavaScript	CO3
15	Working with Arrays, Objects, Sets, and Maps in JavaScript	CO3
16	DOM Manipulation and Event Handling with JavaScript	CO3
17	Modern JavaScript Features: let/const, Destructuring, Spread/Rest	CO3
18	Using Promises, Async/Await, and Fetch API for Web Requests	CO3

Skilling session no	Topics/Experiments	CO-Mapping
19	Form Validation, Error Handling, and Local Storage in JavaScript	CO4
20	Creating React Apps and Understanding JSX and Components	CO4
21	State Management in React Using useState and useEffect Hooks	CO4
22	Routing, Navigation, and Component Communication in React	CO4
23	Reusable UI Development Using Tailwind CSS and Material UI	CO4
24	Testing React Apps and Advanced React with Context API and Hooks	CO4
25	Development with Node.js and Express.js	CO4
26	Development Using Next.js and MongoDB Operations	CO4

Skilling Session wise Teaching – Learning Plan

SESSION NUMBER : 1

Session Outcome: 1 Install Git and Configure a Local Repository

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
50	Learn how to install Git and perform initial setup on your local system.	3	PPT	--- NOT APPLICABLE ---
50	Configure your identity and initialize a new local Git repository.	3	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 2

Session Outcome: 2 Basic Git Commands and Git Workflow in Practice

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
50	Use fundamental Git commands like add, commit, and status to track changes.	3	PPT	--- NOT APPLICABLE ---
50	Understand how changes move through the Git workflow stages.	3	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 3

Session Outcome: 3 Branching, Merging, and Conflict Resolution in Git

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
50	Create and manage multiple branches for parallel development.	3	PPT	--- NOT APPLICABLE ---
50	Merge branches and resolve conflicts during collaborative work.	3	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 4

Session Outcome: 4 Working with Remote Repositories and GitHub

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
50	Connect your local Git repository to GitHub using remote commands.	3	PPT	--- NOT APPLICABLE ---
50	Connect your local Git repository to GitHub using remote commands.	3	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 5

Session Outcome: 5 Git Reset, Revert, Logs, and Managing

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
50	View and analyze commit history using Git logs.	3	PPT	--- NOT APPLICABLE ---
50	Undo or roll back changes using reset and revert commands.	3	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 6

Session Outcome: 6 Creating Structured Webpages with Semantic HTML5

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
50	Design well-structured web pages using semantic tags like and	3	PPT	--- NOT APPLICABLE ---

	.			
50	Improve web accessibility and SEO with semantic HTML.	3	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 7

Session Outcome: 7 Building HTML Forms with Input Types and Validation Attributes

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
50	Create interactive forms using modern HTML input types.	3	PPT	--- NOT APPLICABLE ---
50	Create interactive forms using modern HTML input types.	3	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 8

Session Outcome: 8 Embedding Media Elements: Images, Audio, and Video in HTML

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
50	Insert multimedia content such as images, audio, and video in web pages.	3	PPT	--- NOT APPLICABLE ---
50	Use ,	3	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 9

Session Outcome: 9 Styling Webpages with CSS Syntax, Selectors, and Properties

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
50	Apply styles using CSS rules, properties, and selectors.	3	PPT	--- NOT APPLICABLE ---
50	Understand the cascade and specificity in CSS.	3	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 10

Session Outcome: 10 Designing Responsive Layouts with Media Queries and Flexbox

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
50	Use Flexbox to create flexible, responsive layouts.	3	PPT	--- NOT APPLICABLE ---
50	Apply media queries to adapt designs for various screen sizes.	3	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 11

Session Outcome: 1 Advanced HTML5 Tags and Enhanced Form Functionalities

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
50	Use structural tags like , , and .	3	PPT	--- NOT APPLICABLE ---
50	Enhance forms with HTML5 features like autofocus and pattern.	3	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 12

Session Outcome: 2 CSS Positioning and Animation with Keyframes and Transitions

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
50	Position elements using CSS strategies like relative, absolute, and fixed.	3	PPT	--- NOT APPLICABLE ---
50	Position elements using CSS strategies like relative, absolute, and fixed.	3	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 13

Session Outcome: 3 JavaScript Basics: Syntax, Variables, Data Types, and Operators

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
50	Learn JavaScript syntax and declare variables with let, const, and var.	3	PPT	--- NOT APPLICABLE ---
50	Understand primitive data types and use basic operators.	3	PPT	--- NOT APPLICABLE

SESSION NUMBER : 14

Session Outcome: 4 Using Functions, Conditionals, and Loops in JavaScript

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
50	Write and invoke functions using traditional and arrow syntax.	3	PPT	--- NOT APPLICABLE ---
50	Write and invoke functions using traditional and arrow syntax.	3	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 15

Session Outcome: 5 Working with Arrays, Objects, Sets, and Maps in JavaScript

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
50	Manipulate collections using arrays, objects, and built-in methods.	2	PPT	--- NOT APPLICABLE ---
50	Use Set and Map for efficient key-value storage and uniqueness.	2	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 16

Session Outcome: 6 DOM Manipulation and Event Handling with JavaScript

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
50	Access and modify HTML elements via the Document Object Model.	2	PPT	--- NOT APPLICABLE ---
50	Capture and respond to user interactions using event listeners.	3	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 17

Session Outcome: 7 Modern JavaScript Features: let/const, Destructuring, Spread/Rest

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods

50	Use ES6 features like destructuring for cleaner code.	2	PPT	--- NOT APPLICABLE ---
50	Apply spread and rest operators for flexible function arguments and array merging.	3	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 18

Session Outcome: 8 Using Promises, Async/Await, and Fetch API for Web Requests

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
50	Handle asynchronous operations using Promises and async/await.	3	PPT	--- NOT APPLICABLE ---
50	Use the Fetch API to make network requests to external APIs.	3	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 19

Session Outcome: 9 Form Validation, Error Handling, and Local Storage in JavaScript

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
50	Validate form inputs using JavaScript logic.	3	PPT	--- NOT APPLICABLE ---
50	Validate form inputs using JavaScript logic.	3	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 20

Session Outcome: 2 Creating React Apps and Understanding JSX and Components

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
50	Initialize React apps using tools like Vite or Create React App.	3	PPT	--- NOT APPLICABLE ---
50	Write and structure components using JSX syntax.	3	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 21

Session Outcome: 1 State Management in React Using useState and useEffect Hooks

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
50	Manage component state with the useState hook.	2	PPT	--- NOT APPLICABLE ---
50	Perform side effects like data fetching with useEffect.	3	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 22

Session Outcome: 2 Routing, Navigation, and Component Communication in React

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
50	Implement routing and navigation using React Router.	3	PPT	--- NOT APPLICABLE ---
50	Pass data between components using props and callbacks.	3	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 23

Session Outcome: 3 Reusable UI Development Using Tailwind CSS and Material UI

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
50	Style applications with utility-first classes from Tailwind CSS.	3	PPT	--- NOT APPLICABLE ---
50	Build consistent interfaces using Material UI components.	3	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 24

Session Outcome: 4 Testing React Apps and Advanced React with Context API and Hooks

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
50	Write test cases for React components using Testing Library.	3	PPT	--- NOT APPLICABLE ---
50	Share global state using Context API and custom hooks.	3	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 25

Session Outcome: 5 Development with Node.js and Express.js

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
50	Build a simple backend server using Node.js and Express.	3	PPT	--- NOT APPLICABLE ---
50	Handle REST API routes and middleware for data processing.	3	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 26

Session Outcome: 6 Development Using Next.js and MongoDB Operations

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
50	Develop full-stack apps using Next.js with static/dynamic rendering.	3	PPT	--- NOT APPLICABLE ---
50	Develop full-stack apps using Next.js with static/dynamic rendering.	3	PPT	--- NOT APPLICABLE ---

WEEKLY HOMEWORK ASSIGNMENTS/ PROBLEM SETS/OPEN ENDEDED PROBLEM-SOLVING EXERCISES etc:

Week	Assignment Type	Assignment No	Topic	Details	co

COURSE TIME TABLE:

	Hour	1	2	3	4	5	6	7	8	9
Day	Component									
Mon	Theory	---	---	---	---	--	--	---	---	--
	Tutorial	---	---	---	---	--	--	---	---	V-S101,V-S102,V-S103,V-S104,V-S105,V-S106,V-S107,V-S108

	Lab	---	---	---	---	--	--	---	---	--
	Skilling	---	---	---	---	V-S101,V-S102,V-S103,V-S104,V-S105,V-S106,V-S107,V-S108	V-S101,V-S102,V-S103,V-S104,V-S105,V-S106,V-S107,V-S108	---	---	--
Tue	Theory	V-S101	V-S101	---	---	---	---	---	---	V-S201,V-S202,V-S203,V-S204,V-S205,V-S206,V-S207,V-S208
	Tutorial	--	--	---	---	---	---	---	---	--
	Lab	--	--	---	---	---	---	---	---	--
	Skilling	--	--	---	---	---	---	---	---	--
Wed	Theory	V-S102,V-S103,V-S104,V-S105,V-S106,V-S107,V-S108	V-S102,V-S103,V-S104,V-S105,V-S106,V-S107,V-S108	---	---	--	--	---	---	--
	Tutorial	--	--	---	---	--	--	---	---	V-S201,V-S202,V-S203,V-S204,V-S205,V-S206,V-S207,V-S208
	Lab	--	--	---	---	--	--	---	---	--
	Skilling	--	--	---	---	V-S201,V-S202,V-S203,V-S204,V-S205,V-	V-S201,V-S202,V-S203,V-S204,V-S205,V-	---	---	--

						S206,V-S207,V-S208	S206,V-S207,V-S208			
Thu	Theory	---	---	--	--	---	---	---	---	---
	Tutorial	---	---	--	--	---	---	---	---	---
	Lab	---	---	--	--	---	---	---	---	---
	Skilling	---	---	V-S201,V-S202,V-S203,V-S204,V-S205,V-S206,V-S207,V-S208	V-S201,V-S202,V-S203,V-S204,V-S205,V-S206,V-S207,V-S208	---	---	---	---	---
Fri	Theory	---	---	--	--	---	---	---	---	V-S201,V-S202,V-S203,V-S204,V-S205,V-S206,V-S207,V-S208
	Tutorial	---	---	--	--	---	---	---	---	--
	Lab	---	---	--	--	---	---	---	---	--
	Skilling	---	---	V-S101,V-S102,V-S103,V-S104,V-S105,V-S106,V-S107,V-S108	V-S101,V-S102,V-S103,V-S104,V-S105,V-S106,V-S107,V-S108	---	---	---	---	--
Sat	Theory	--	--	--	--	--	--	---	---	--
	Tutorial	--	--	--	--	--	--	---	---	--
	Lab	--	--	--	--	--	--	---	---	--
	Skilling	--	--	--	--	--	--	---	---	--

Sun	Theory	--	--	--	--	--	--	--	--	--
	Tutorial	--	--	--	--	--	--	--	--	--
	Lab	--	--	--	--	--	--	--	--	--
	Skilling	--	--	--	--	--	--	--	--	--

REMEDIAL CLASSES:

Supplement course handout, which may perhaps include special lectures and discussions that would be planned, and schedule notified according

SELF-LEARNING:

Assignments to promote self-learning, survey of contents from multiple sources.

S.no	Topics	CO	ALM	References/MOOCS

DELIVERY DETAILS OF CONTENT BEYOND SYLLABUS:

Content beyond syllabus covered (if any) should be delivered to all students that would be planned, and schedule notified accordingly.

S.no	Advanced Topics, Additional Reading, Research papers and any	CO	ALM	References/MOOCS

EVALUATION PLAN:

Evaluation Type	Evaluation Component	Weightage/Marks		Assessment Dates	Duration (Hours)	CO1	CO2	CO3	CO4
End Semester Summative Evaluation Total= 40 %	**Hackathon-Final Review**	Weightage	20		180	5	5	5	5
		Max Marks	100			25	25	25	25
	Skill Sem-End Exam	Weightage	20		180	5	5	5	5
		Max Marks	100			25	25	25	25
In Semester Formative Evaluation Total= 40 %	**Global-Certification**	Weightage	10		180	2.5	2.5	2.5	2.5
		Max Marks	100			25	25	25	25
	Skilling Continuous Evaluation	Weightage	10		180	2.5	2.5	2.5	2.5
		Max Marks	100			25	25	25	25
	MOOCs Review	Weightage	10		180	2.5	2.5	2.5	2.5
		Max Marks	100			25	25	25	25
	Continuous Evaluation -Project	Weightage	10		180	2.5	2.5	2.5	2.5
		Max Marks	100			25	25	25	25

In Semester Summative Evaluation Total= 20 %	**Skill In-Sem Exam**	Weightage	20		180	5	5	5	5
		Max Marks	100			25	25	25	25

ATTENDANCE POLICY:

Every student is expected to be responsible for regularity of his/her attendance in class rooms and laboratories, to appear in scheduled tests and examinations and fulfill all other tasks assigned to him/her in every course
In every course, student has to maintain a minimum of 85% attendance to be eligible for appearing in Semester end examination of the course, for cases of medical issues and other unavoidable circumstances the students will be condoned if their attendance is between 75% to 85% in every course, subjected to submission of medical certificates, medical case file and other needful documental proof to the concerned departments

DETENTION POLICY :

In any course, a student has to maintain a minimum of 85% attendance and In-Semester Examinations to be eligible for appearing to the Semester End Examination, failing to fulfill these conditions will deem such student to have been detained in that course.

PLAGIARISM POLICY :

Supplement course handout, which may perhaps include special lectures and discussions

COURSE TEAM MEMBERS, CHAMBER CONSULTATION HOURS AND CHAMBER VENUE DETAILS:

Supplement course handout, which may perhaps include special lectures and discussions

Name of Faculty	Delivery Component of Faculty	Sections of Faculty	Chamber Consultation Day (s)	Chamber Consultation Timings for each day	Chamber Consultation Room No:	Signature of Course faculty:
Venkata Padyala	L	101-MA	-	-	-	-
Venkata Padyala	S	101-MA	-	-	-	-
Venkata Padyala	T	101-MA	-	-	-	-
Nichenametla Rajesh	L	102-MA,202-MA	-	-	-	-
Nichenametla Rajesh	S	202-MA,102-MA	-	-	-	-
Nichenametla Rajesh	T	202-MA,102-MA	-	-	-	-
Shaik Gouse	L	103-MA,203-MA	-	-	-	-
Shaik Gouse	S	103-MA,203-MA	-	-	-	-

Shaik Gouse	T	103-MA,203-MA	-	-	-	-
KRISHNA CHAITANYA GOGINENI	L	204-MA	-	-	-	-
KRISHNA CHAITANYA GOGINENI	S	204-MA	-	-	-	-
KRISHNA CHAITANYA GOGINENI	T	204-MA	-	-	-	-
Sridevi Sakhamuri	L	205-MA,104-MA	-	-	-	-
Sridevi Sakhamuri	S	104-MA,205-MA	-	-	-	-
Sridevi Sakhamuri	T	104-MA,205-MA	-	-	-	-
Deepak V	L	201-MA	-	-	-	-
Deepak V	S	201-MA	-	-	-	-
Deepak V	T	201-MA	-	-	-	-
Beluguru Venkateswarlu	L	105-MA	-	-	-	-
Beluguru Venkateswarlu	S	105-MA	-	-	-	-
Beluguru Venkateswarlu	T	105-MA	-	-	-	-
Dinesh Anguraj	L	106-MA	-	-	-	-
Dinesh Anguraj	S	106-MA	-	-	-	-
Dinesh Anguraj	T	106-MA	-	-	-	-
Padmanaban K	L	107-MA	-	-	-	-
Padmanaban K	S	107-MA	-	-	-	-
Padmanaban K	T	107-MA	-	-	-	-
Ganga Rao	L	206-MA	-	-	-	-
Ganga Rao	S	206-MA	-	-	-	-
Ganga Rao	T	206-MA	-	-	-	-
Arepalli Gopi	L	207-MA,108-MA	-	-	-	-
Arepalli Gopi	S	207-MA,108-MA	-	-	-	-
Arepalli Gopi	T	108-MA,207-	-	-	-	-

		MA				
Satish Thatavarti	L	208-MA	-	-	-	-
Satish Thatavarti	S	208-MA	-	-	-	-
Satish Thatavarti	T	208-MA	-	-	-	-

GENERAL INSTRUCTIONS

Students should come prepared for classes and carry the text book(s) or material(s) as prescribed by the Course Faculty to the class.

NOTICES

Most of the notices are available on the LMS platform.

All notices will be communicated through the institution email.

All notices concerning the course will be displayed on the respective Notice Boards.

Signature of COURSE COORDINATOR

(Deepak V)

Signature of Department Prof. Incharge Academics & Vetting Team Member

Department Of CS&IT

HEAD OF DEPARTMENT:

Approval from: DEAN-ACADEMICS
(Sign with Office Seal) [object HTMLDivElement]