E.M.G. YADAVA WOMENS COLLEGE, MADURAI -14.
(An Autonomous Institution – Affiliated to Madurai Kamaraj University)
Re–accredited (3rd Cycle) with Grade A$^+$ and CGPA 3.51 by NAAC
CBCS
DEPARTMENT OF INFORMATION TECHNOLOGY – B.Sc.
VALUE ADDED COURSE
(w.e.f. 2023 – 2024 Batch onwards)

Web Development

1. This Course is taken up by Third Year Information Technology students

2. Period of study: V Semester

COURSE STRUCTURE

Contact Hours: 30 Hrs.

Credit: 1

S.No.	Sem.	Subject Code	Title of the Paper
1.	V	23ITVAC1	**Theory:** Web Development
2.	V	23ITVAC1P	**Practical:** Web Development Lab

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Title of the Paper: Web Development

Semester   : V   **Contact Hours : 30 Hrs.**

Subject Code   : 23ITVAC1   **Credit   : 1**

Objectives:

1. To Create a basic web page using HTML & CSS.

2. To Understand JSX and React JS Environment Setups.

3. To analyze a Real-Time Application by Using React JS.

4. To develop skills on Routing in React JS and Design JS Forms.

5. To Write Styles in React JS and React Router with Navigation**.**

UNIT – I:

      JavaScript: History of JavaScript – Features - let & const and its example - Arrow Functions – Alternative - Tips and Arrow Functions - Exports and Imports - Tips for exports and imports – Classes - Classes example – Inheritance - Spread and rest Parameter – Destructing. **React JS:** React JS Introduction - Advantages of React JS - Work flow of React JS - Scope of React JS.

UNIT – II:

      Overview of JSX: Introduction of Virtual DOM - Difference between JS and JSX - React Components overview - Containers and components - Child Components - Namespace components - JavaScript expressions available in JSX.

React JS Environment Setups: Node setup - use NPM – creation of package.json and its purpose - ES6 Introduction and features - Webpack Overview - Best IDE for React JS and write optimized code in React JS - React JS browser plugins overview.

UNIT – III:

      A Real-Time Application by Using React JS: Create a React component with JSX – template - create Nested Components - React JS render - React Props overview - Introduction

of Props validation with data types - Flow of States, Initialize states and update states. **React JS Forms and UI**: Lists of Form components - Setup Controlled and Uncontrolled form components - Control Input elements - set default values on all formats of Input elements - React JS Form validations - write Styles - Animations overview.

UNIT – IV:

React JS Component Life Cycles Overview: Initial Render - Props Change-Stage Change-Component willMount -Component didMount - Component Unmount.

Routing in React JS and Other JS Concepts: Single Page Application Overview - configure React Router - History of Router - Handle Conditional statement in JSX - IIFE in JSX for complex logic overview. **Event Handling in JSX**: onBlur, onKeyUp, onChange and other useful primary events in React JS - Sharing events between the components.

UNIT – V

Write Styles in React JS: CSS and inline styles in React JS overview - Introduction to styled components - Real-time Practical - Styling the application using styled component - use Animations in the Application. **React Router with Navigation:** Load the router library - Configure the React Router - Pass and receive parameters - Integration of React-cookie overview.

Book Reference:

1. Jeremy Osborn, Jennifer Smith & the AGI Training Team. (2011). *Web Design with HTML and CSS.* Wiley Publishing Inc. Indianapolis. Indiana.

2. Jennifer Niederst Robbins. (2012). *Learning web designing A Beginners guide to | HTML,CSS, Java script and Web graphics.* Oreilly Publications. New Delhi. Fourth Edition.

3. Mariza Maini. (2015). *WEB DESIGN Manual.* Open Society for Idea Exchange. Zagreb.

4. Robin Wieruch. (2018). *The Road to React.* Independently published.

5. Maximilian Schwarzmuller. (2022). *React Key Concepts.* Packt Publishing. Mumbai. India.

PRACTICALS

Title of the Paper: Web Development Lab

Subject Code   :   23ITVAC1P

List of Programs:

1. NPM Installation by locally and Globally

2. Create a Basic App with React JS and other Supported NPM

3. Create a Small React Module

4. Use All the states in the created Application.

5. Create a React Form.

6. Client-side form validation.

7. Applying form components.

8. Submit and Rest the form.

9. Applying Different Life cycles in the Application.

10. When to choose Appropriate life cycles.

11. Create a Single Page Application.

12. Applying Routing.

13. Dynamically render the components based on the URL.

14. Communicate Data between components.

15. Applying all lists of events.