INT252:WEB APP DEVELOPMENT WITH REACTJS

L:2 T:0 P:2 Credits:3

Course Outcomes: Through this course students should be able to

CO1 :: understand advanced JavaScript concepts

CO2 :: develop JSX components and use props in React app

CO3 :: compose and manipulate states and should develop an understanding of events & Hooks

CO4 :: use forms with state and validating the form for errors and display errors

CO5 :: make a react app by using HTTP methods and routing the pages

CO6 :: validate or debug the react app and deploy app onto the server

Unit I

Refreshing JavaScript : ES6 Refresher- Classes, Arrow Functions, Variables (let, const, var), Array Methods (concat(), every(), filter(), find(), forEach(), Array.from(), index(), map(), reduce(), reverse ()), Destructuring, Spread Operator, Rest Operator, Modules, Introduction to SPA, MPA and React framework

ReactJS installation : Installing React using Create React App and Vite, React Environment, Folder Structure, JSX, Understanding Component Basics, JSX introduction, createElement() argumets, JSX vs React.createElement() method, JSX expressions, Rendering Elements into DOM

Unit II

Components and styles in React : Creating components, Class components and Functional components, Functional Components, React Virtual DOM, Props, CSS in React - Inline styling, CSS stylesheets, CSS Modules, Adding TailwindCSS

Unit III

Events, States and component lifecycle in React : Event handling in React, Creating State, Stateless and Stateful Components, Component Lifecycle (Mounting, Updation, Unmounting)

Understanding Hooks : Hooks basics, Built-in hooks, useState, useEffect, useContext, useRef, useReducer, useCallback, useMemo, custom hooks

Unit IV

Working with Forms : Adding forms, Handling forms, Submitting forms, controlled and uncontrolled components, Forms validation - error checking and displaying errors

Unit V

HTTP Methods : Fetch() and Axios, GET Requests, POST Requests, PUT Request and DELETE Action

Routing : Setting up routing and routes, Navigating to pages, Navigating back and next page, Passing data via Query Params, Passing data between pages, Fetching data

Unit VI

Redux : Redux basics, App starting Point for Redux, Understanding the Redux flow, Store and Reducer, Connecting Components, Dispatching actions

Debugging and Deployment : Building the app, Debugging the React App

List of Practicals / Experiments:

List of Practicals

- Demonstrate let, var and const in JavaScript with an example
- Demonstrate classes, arrow Functions, map() in JavaScript
- Demonstrate Destructuring, Spread Operator, Modules
- Demonstrate The difference between JSX and React.createElement() method in ReactJS
- Implement class components in ReactJS
- Implement function components in ReactJS
- Demonstrate States in ReactJS

- Demonstrate styling in ReactJS inline, stylesheets, CSS modules, Bootstrap
- Demonstrate hooks in ReactJS.
- Implement event handling in ReactJS
- Implement a form with Redux
- Create a React app with routes
- Create a React app that fetches data from a public API
- Implement props in ReactJS

Text Books:
 1. REACT.JS DESIGN PATTERNS by ANTHONY ONYEKACHUKWU OKONTA, BPB PUBLICATIONS

References:
 1. REACT: UP & RUNNING by STOYAN STEFANOV, O'REILLY