10 Weeks ReactJs Training Syllabus

WEEK 1: INTRODUCTION TO REACTJS

- Introduction to ReactJS and its ecosystem
- Setting up development environment (Node.js, npm, IDE)
- Understanding JSX syntax
- Creating your first React component

WEEK 2: REACT COMPONENTS

- Understanding React components and props
- Creating functional and class components
- State management in React components
- Handling events in React

WEEK 3: REACT HOOKS

- Introduction to React Hooks
- Working with useState and useEffect hooks
- Using custom hooks for reusable logic
- Migrating from class components to functional components with hooks

WEEK 4: REACT ROUTER

- Introduction to React Router
- Setting up routing in a React application
- Creating nested routes and route parameters
- Implementing navigation between different views

WEEK 5: STYLING IN REACT

- Styling React components with CSS
- Using CSS frameworks like Bootstrap or Material-UI with React

- Implementing responsive design in React applications
- CSS-in-JS libraries and their usage

WEEK 6: STATE MANAGEMENT WITH REDUX

- Introduction to Redux and its principles
- Setting up Redux in a React application
- Creating actions, reducers, and the Redux store
- Connecting React components to the Redux store

WEEK 7: ASYNCHRONOUS PROGRAMMING WITH REDUX

- Handling asynchronous actions with Redux Thunk or Redux Saga
- Implementing API calls with Redux
- Managing loading and error states with asynchronous actions
- Best practices for handling async operations in Redux

WEEK 8: ADVANCED TOPICS IN REACT

- Higher-order components (HOCs) and render props
- Context API for global state management
- Error boundaries and code splitting for performance optimization
- Introduction to server-side rendering (SSR) with React

WEEK 9: TESTING REACT APPLICATIONS

- Overview of testing principles and methodologies
- Writing unit tests with Jest and Enzyme
- Snapshot testing and mocking dependencies
- Testing Redux actions, reducers, and connected components

WEEK 10: DEPLOYMENT AND PROJECT SHOWCASE

- Deploying React applications to cloud platforms (e.g., Netlify, Vercel)

- Best practices for production builds and optimizations
- Showcase of individual or group projects developed during the course
- Feedback and review sessions for improvement

AFTER COURSE ASSIGNMENTS:

1. Build a CRUD Application: Develop a CRUD (Create, Read, Update, Delete) application using React and Redux, integrating it with a backend API to perform full-stack operations.
2. Implement Authentication and Authorization: Extend the CRUD application to include user authentication and authorization features, such as login, registration, and access control based on user roles.
3. Performance Optimization Project: Identify performance bottlenecks in a React application and implement optimizations such as code splitting, lazy loading, and caching to improve load times and responsiveness.

This syllabus covers essential ReactJS concepts and practical skills needed for students to become industry-ready developers. The suggested assignments further reinforce these skills and provide real-world application opportunities.