

React JS Course Syllabus

Duration: 2.5 Months (1.5 hrs/day, 6 days/week)

The course covers JavaScript fundamentals and React development.

Fundamentals of JavaScript

- Introduction to JavaScript, Variables, and Data Types
- Operators and Control Structures
- Functions and Scope
- Arrays and Objects
- DOM Manipulation
- ES6 Features (let, const, arrow functions)

Advanced JavaScript Concepts

- Modules and Imports/Exports
- Types of function
- JavaScript Promises and Async/Await
- Higher-order Functions
- Closures and the 'this' Keyword
- Introduction to JSON and Fetch API

Introduction to React

- What is React? Setting Up the Environment
- JSX Syntax and Rendering Elements
- Components - Functional vs Class Components
- Props and State Management
- Component Lifecycle Methods
- Handling Events in React
- Conditional Rendering in React

Styling in React Applications

- CSS Basics for React Applications
- Introduction to Tailwind CSS - Setup and Usage
- CSS Modules vs Styled Components
- Responsive Design with Tailwind CSS
- Advanced Styling Techniques in React

React Advanced Concepts

- Introduction to React Hooks (useState, useEffect)
- Custom Hooks and Best Practices
- Context API for State Management

- State Management with Redux Toolkit
- Forms in React - Controlled Components
- Form Validation Techniques
- Integration with APIs

Routing and State Management

- Introduction to React Router - Setup and Basic Routing
- Nested Routes and Route Parameters
- State Management with Redux - Basics
- Actions, Reducers, and Store in Redux
- Connecting Redux with React Components
- Asynchronous Actions with Redux Thunk

Data Fetching and State Management Tools

- Introduction to React Query
- Fetching Data with React Query
- Caching Strategies in React Query
- Mutations with React Query
- Integrating APIs into Applications
- Project Work - Building an API-driven Application
- Project Work - Styling a Sample Application

Next.js and Advanced Techniques

- Introduction to Next.js: Features and Benefits
- Routing in Next.js
- API Routes in Next.js
- Integrating Tailwind CSS with Next.js
- Server-side Rendering (SSR) and Static Site Generation (SSG) in Next.js

TypeScript with React

- Introduction to TypeScript - Setup
- Type Annotations in Functions
- Interfaces and Types in TypeScript
- Using TypeScript with React Components
- Props and State in TypeScript
- Project Work - Building a TypeScript Application

Deployment and Testing

- Error Boundary in React
- React Performance Optimization
- Testing React Components with Jest

- Deployment and Hosting React/Next.js Apps through Netlify or Vercel

Final Projects & Review

Project Work on Final Application (Choose between a full-stack application or an advanced feature-rich application)

Presentation of Projects & Feedback Sessions.

Review Sessions & Q&A.