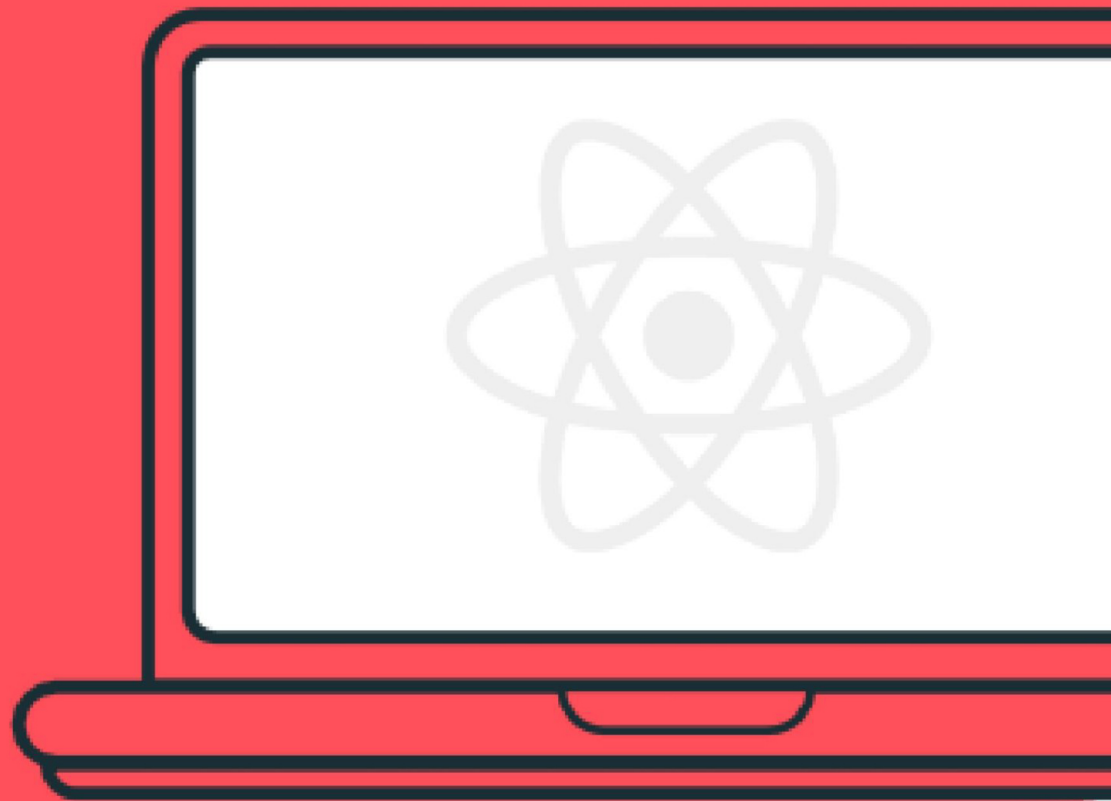


# FULL STACK DEVELOPMENT WITH REACT & NODE JS



**DETAILED COURSE SYLLABUS**

## Week 1

### Session 1: Introduction to HTML & CSS

- Understanding the basics of web development
- Introduction to HTML tags and attributes
- Styling HTML pages with CSS

### Session 2: GIT & Responsive Design

- Introduction to GIT and Version Control
- Setting up a GIT repository and committing changes
- Creating responsive web pages with media queries
- Introduction to CSS frameworks like Bootstrap

## Week 2

### Session 3: Advanced CSS Techniques & Best Practices

- Advanced CSS techniques like flexbox and grid
- Best practices for HTML and CSS development
- Overview of JavaScript language and its features

### Session 4: JavaScript & ES6 Essentials (Part 1)

- Variables, data types, and operators
- Control flow statements (if-else, for, while, switch)
- Closures, Promises, Callbacks & Event loops

## Week 3

### Session 5: JavaScript & ES6 Essentials (Part 2)

- Introduction to ES6 features like let, const, and arrow functions
- Working with functions, objects, and arrays
- Variable types, scoping, and error handling

### Session 6: JavaScript DOM Manipulation & React Basics

- Manipulating the DOM with JavaScript
- Handling events and user interactions with JavaScript
- Debugging and troubleshooting JavaScript code

## Week 4

### Session 7: Introduction to React & JSX

- Introduction to React and its features
- Setting up a React development environment
- JSX syntax and its benefits
- Creating React components

### Session 8: React Components, Functional Components, Props & Conditional Rendering

- Creating reusable React components
- Introduction to Functional Components.
- Using props to pass data between components
- Creating conditional rendering and handling events in React
- Best practices for React component development

## Week 5

### Session 9: React States & Hooks

- Introduction to React Hooks
- Understanding state and its importance in React
- Understanding useState and useEffect Hook
- Implementing custom hooks in React

### Session 10: React Routing and Types of Routers

- Understanding React Routing
- Understanding client-side routing & server-side routing
- Introduction to different types of React routers

## Week 6

### Session 11: Class-Based Components, React Lifecycle & Context

- Introduction to class-based components
- Understanding React Lifecycle and its phases
- Introduction to React context
- Use of lazy and suspense

## **Session 12: Introduction to Node.js**

- Introduction to Node.js and its features
- Understanding the basics of web servers and HTTP requests
- Node Modules - HTTP, File Systems, etc.
- Understanding the Node.js event loop and asynchronous programming

## **Week 7**

### **Session 13: Node.js Advanced Concepts**

- Using callbacks, promises, and async/await in Node.js
- Handling errors and debugging Node.js applications
- Implementing security best practices in Node.js

### **Session 14: Building RESTful APIs with Node & Express.js**

- Understanding the principles of RESTful APIs
- Setting up an Express.js development environment
- Building a simple Express.js server
- Building CRUD operations with Express.js
- Implementing middleware in Express.js
- Best practices for building scalable and maintainable APIs

## **Week 8**

### **Session 15: Introduction to MongoDB & Mongoose**

- Understanding NoSQL databases and MongoDB
- Setting up a MongoDB development environment
- Building MongoDB schema and models with Mongoose
- Using Mongoose to perform CRUD operations in MongoDB

### **Session 16: MongoDB Indexing, Aggregation & Security**

- Understanding MongoDB indexing and aggregation
- Implementing authentication and authorization with MongoDB
- Best practices for securing MongoDB applications
- Implementing data migrations and backups in MongoDB

## Week 9

### Session 17: State Management with Redux

- Introduction to state management with Redux
- Setting up Redux in a React application
- Creating Redux actions and reducers
- Integrating Redux with React Components

### Session 18: RESTful API Development with Express.js

- Advanced RESTful API concepts
- Implementing authentication and authorization in Express.js
- Handling file uploads and other advanced features
- Testing and documenting RESTful APIs

## Week 10

### Session 19: Major Project - Developing an E-Commerce Website

- Applying the knowledge gained throughout the course
- Building an E-Commerce Website with MERN stack
- Developing features, integrating APIs, and implementing user authentication
- Project development, testing, and debugging

### Session 20: Deployment and Hosting

- Introduction to CI & CD pipelines
- Deploying React applications using hosting services
- Deploying Node.js applications with server configurations