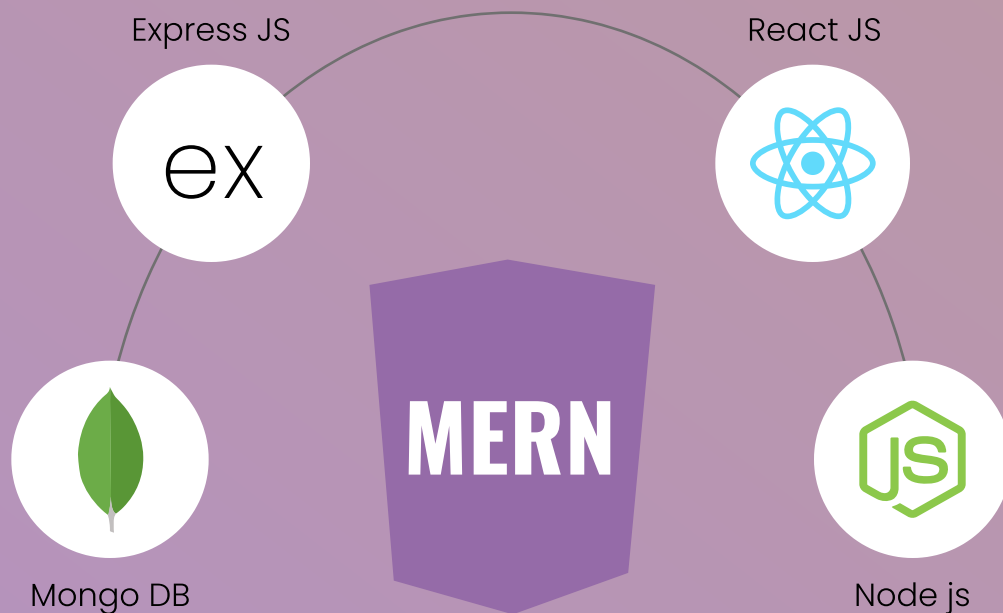


# MERN

*Full Stack Development*



Detailed  
Course Syllabus

# CONTENTS

## Week 01

### Class : 1 **Introduction to HTML & CSS**

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

### Class : 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 02

### Class : 1 **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

### Class : 2 **JavaScript & ES6 Essentials Variables, datatypes, and operators**

- Control flow statements (if-else, for, while, switch)
- Introduction to ES6 features like let, const, arrow functions

## Week 03

### Class : 1 **JavaScript Fundamentals & DOM Manipulation**

- JavaScript fundamentals: functions, objects, arrays
- Manipulating the DOM with JavaScript
- Handling events and user interactions with JavaScript
- Debugging and troubleshooting JavaScript code

### Class : 2 **Introduction to React & JSX**

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

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## Week 04

### Class : 1 **React Components, Props & Conditional Rendering**

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

### Class : 2 **React State, Event Handling & Forms**

- Understanding state and its importance in React
- Setting state and handling events in React
- Using forms and controlled components in React
- Handling errors and edge cases in React

## Week 05

### Class : 1 **React Lifecycle & Hooks**

- Understanding the React lifecycle and its phases
- Using lifecycle methods to optimize performance
- Introduction to React hooks
- Implementing custom hooks in React

### Class : 2 **Introduction to Node.js & Express.js**

- Introduction to Node.js and its features
- Understanding the basics of web servers and HTTP requests
- Setting up an Express.js development environment
- Building a simple Express.js server

## Week 06

### Class : 1 **Building RESTful APIs with Node & Express.js**

- Understanding the principles of RESTful APIs
- Building CRUD operations with Express.js
- Implementing middleware in Express.js
- Best practices for building scalable and maintainable APIs

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## Class : 2 **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

## Week 07

### Class : 1 **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

### Class : 2 **Node.js Advanced Concepts & Authentication**

- Understanding the Node.js event loop and asynchronous programming
- Using callbacks, promises, and async/await in Node.js
- Handling errors and debugging Node.js applications
- Implementing security best practices in Node.js

## Week 08

### Class : 1 **Starting & Implementing the Final Project**

- Planning and starting the final project with MERN Stack
- Implementing the learned concepts in the project
- Deployment of the project using hosting services

### Class : 2 **Final Project Review & Improvements**

- Code review and feedback session
- Making improvements based on feedback
- **Final project presentation and wrap-up**