MERN stack Syllabus

**Week 1:**

- Understanding How Websites Work (Frontend, Backend, API, HTTP Status Codes, Database Types, HTTP Verbs)

- Delving into the Node.js World: Introduction to Node.js, Installation, npm, Express, creating a Simple GET API, Port Numbers

- Learning How to Push Code to GitHub

- Automatic Restart of Our Node.js Server

- Introduction to Postman: Testing Simple APIs through Postman

- Exploring SQL vs. NoSQL: When to Use Each? Introduction to ORM (Sequelize, Mongoose, Prisma)

- The Importance of Databases: Connecting to MongoDB Atlas Using Mongoose

**Week 2:**

**Project 1 (CMS)**

- Creating a Simple POST API to Demonstrate Database Insertion

- Understanding CRUD: Starting a Simple Project (CMS) to Learn CRUD Operations

- Implementing CRUD APIs in Node.js

**Week 3:**

- Starting the Frontend with React.js to Implement CRUD APIs

- Why React Over HTML/CSS?

- Understanding React Concepts: Virtual DOM, Reconciliation, Diffing, and More

- Navigating the World of Routing with react-router-Dom in React

- Components and Props in React

- Exploring React Hooks: Types of Hooks with a Brief Walkthrough

- Understanding the useState Hook

- Exploring Three Types of useEffect Hooks in Detail

**Week 4:**

- Implementing Node.js CRUD APIs in React.js

- Implementing Read/Get Operations

- Implementing Create/Post Operations

- Implementing Single Read Operations

- Implementing Delete Operations

- Implementing Create Operations

- Completion of the Simple CMS Project

**Week 5 - Week 7: Project 2 (Ecommerce):**

- Introduction to New Concepts in Project 2

- Understanding Authentication in Node.js: Sessions, Cookies, Middleware’s, JSON Web Tokens

- Creating Register/Login APIs

- Building CRUD APIs with a Focus on Products (Different from Previous CRUD)

- Handling Images Using Multer

- Adding Product to Cart API, Checkout API

- Implementing Features like Forgot Password, Reset Password, and OTP Sending

- Implementing Product Rating Feature

- Ensuring Node.js Security: Preventing Common Vulnerabilities

**Week 7 Onward:**

- Translating All Ecommerce APIs into React.js

- Learning Additional Concepts in React: State Management, Various Hooks, Token Handling, Local Storage, and More

- Hosting the Project Online for Free (Final Step)

- Exploring CI/CD Pipelines: How to Push Code to GitHub, Types of Hosting Providers, and More

- Discussion on Career Opportunities After Completing the Course