

MERN Stack Course

Overview

Course Details:-

Duration	80 days
Daily Class Hours	1 Hour
Medium	Online
Platform	Google Meet
Languages	Html, Css, Javascript
Framework/Libraries	Node JS, React JS, Express JS, Mongoose
Database	MongoDB
IDE / Code Editor	Visual Studio Code

Syllabus

Week 1: Overview and HTML

- Introduction to Full Stack Development
- Exploring of what you will learn in this course
- Introduction to HTML
- Elements and Attributes
- Boiler-Plate Structure
- Headings, paragraphs, links, images
- List, Form and Table
- Other Elements and Attributes
- Media Elements
- Symbols
- Semantics

Week 2-3: CSS

- Introduction to CSS
- Css Syntax and Basic Selectors
- Colors and Units
- Text Styling and Backgrounds
- The Box Model (Margin, Padding, Border)
- Block vs Inline
- Combinators and Grouping
- Floating
- Gradients and Shadows
- Positions and Transitions
- Attributes Selectors
- List, Tables and Form Styling

- Pseudo Classes and Pseudo Elements
- Flexbox and Grid
- Responsive Design
- **Mini Project [Html and Css]**

Week 4: Bootstrap, Git and GitHub

- Introduction to Bootstrap
- Containers
- Grid system and Breakpoints
- Components and Utilities
- Customization
- **Mini Project [Html, Css and Bootstrap]**
- Github Setup
- Working with Repository
- Multiple Branches in Repository
- Github Codespaces
- Collaboration as a Team on Single Project in Repository

Week 5-7: Javascript

- Introduction to Javascript
- Variables and Outputs
- Datatypes and Type Conversion
- Operators and Comments
- Conditional Statements and Loops
- Functions and Scope
- String, Array and Object Methods
- Arrow Functions and Higher Order Functions

- Exception Handling and DOM
- Object Oriented Programming
- Encapsulation, Inheritance and Polymorphism
- Local Storage and Json Data Structure
- Asynchronous Javascript
- Callbacks and Promises
- Async/await and Fetch API
- Error Handling & Debugging
- Introduction to Modules & Import/Export

Week 8: Node JS

- Introduction to Node Js, Npm and Yarn
- Creating a HTTP Server
- Working with Built Modules: fs, path and os
- Custom Module
- Common JS Module vs ES6 Module
- Event loop

Week 9-11: React JS

- Introduction to React JS
- JSX Structure and Components
- Props and Conditional Rendering
- Array Mapping and Event Handling
- State Management and Form Handling
- UseEffect Hook and Components LifeCycle
- React Router Dom (Routing, URL Params, Nested Routes)
- Rendering Media and Pages

- External and Inline Css
- Lifting state up, prop drilling
- Context API and UseRef Hook
- Custom hooks, Error Boundaries and Optimization
- API Integration with Axios
- **Mini Project [Html, Css, Bootstrap and React JS]**

Week 12-15: Express JS, MongoDB with Frontend-Backend Integration

- Introduction and Project Setup
- Writing First API
- Built-In Server and Nodemon
- Standard Http Methods
- Routing Basics and Handling Incoming Data
- Built-Middleware and Custom Middleware
- Environment Variables
- Connecting MongoDB with Mongoose
- Schemas, Models and Model Fields
- Model Relationship and Mongoose Queries
- Organizing Folder Structure
- User Login System and JWT Authentication
- Password Hashing
- Cross Origin Policy
- Filtering, Sorting and Pagination
- Rate Limiting
- File Uploads
- Protected Routes in React

Week 16: Final Project

- Full Stack Project with all content learned from the course
- Deploying Project in Cloud Platform

After Course:

- Certificates will be issued after project submission
- Mentor will help every student to create ATS friendly resume and good profile in popular job portals for better search appearance
- Student will be add to dedicated community where all available job opportunities will be posted.