



# Full Stack Development MERN Certification Program

A large, semi-transparent graphic of a stylized arrow pointing to the right, composed of a light blue upper half and a light yellow lower half, is positioned behind the text.

M - MongoDB

E - Express

R - React

N - Node

## CLASS SCHEDULE:

There will be more than 50+ hours of video lectures + 1 Live session of 2 hours per week.

Live sessions will be dedicated to project building

## DETAILED SYLLABUS

### 1. INTRO TO WEB DEVELOPMENT/ COURSE INTRO

- i. What is web development?
- ii. How websites work?
- iii. Advantages of learning web development
- iv. History of web development
- v. Course and Projects Overview

### 2. HTML – PART 1

- i. What is HTML?
- ii. Structure of Webpage
- iii. HTML Tags
- iv. Adding and formatting texts, title, paragraph, body
- v. Lists – Ordered/Unordered
- vi. Images
- vii. Forms

### 3. HTML – PART 2 | CSS – PART 1

- i. Links
- ii. Tables
- iii. Iframes, Videos
- iv. Anchor tags
- v. HTML Divs
- vi. CSS Introduction
- vii. Inline vs Internal vs External styling
- viii. CSS Display
- ix. Project 1 - To-do App – Frontend using basic HTML/CSS

## CSS- PART 2 | ADVANCED CSS – PART 1

- x. CSS Backgrounds, Borders, Margins, Padding
- xi. CSS Font Styling
- xii. Stylings Lists
- xiii. Styling Tables, Forms
- xiv. Gradients
- xv. Font Awesome

## 4. ADVANCED CSS – PART 2

- i. Tool tips
- ii. Buttons
- iii. Transitions, Transformation, Animations
- iv. Box sizing
- v. Flex
- vi. Grid
- vii. Project 1 - To-do App – Enhance Frontend using CSS

## 5. PROJECT BUILDING

- i. Responsive Media Queries
- ii. Discuss TO-DO App
- iii. Project 2 - Blog – Add blog frontend using HTML/CSS

## 6. BOOTSTRAP – PART 1

- i. Bootstrap containers
- ii. Tables, Images, Colors
- iii. Alerts, Buttons
- iv. Spinners, Cards

## 7. BOOTSTRAP – PART 2

- i. Pagination, Drop Down
- ii. Carousel
- iii. To-do App – Develop To-do App Frontend using Bootstrap
- iv. GitHub Overview

## 8. JAVASCRIPT – PART 1

- i. Introduction to JavaScript
- ii. Variables, scoping, Data type
- iii. Strings and Numbers
- iv. Operators and loops
- v. Functions
- vi. Project 1 – Add Functionalities to To-do App

## 9. JAVASCRIPT – PART 2 (DATA STRUCTURES)

- i. Arrays
- ii. Linked List
- iii. Stacks
- iv. Queues
- v. Maps
- vi. Hashing

## 10. JAVASCRIPT – PART 3

- i. Understanding and working with DOM
- ii. Developer tools in Browsers
- iii. JQuery
- iv. Project 2 – Add Functionalities to Blog

## 11. JAVASCRIPT – PART 4

- i. Prototypes
- ii. Closures
- iii. Local Storage
- iv. Ajax
- v. Promises
- vi. Project 3 – Dice Roller Game using Animation and JavaScript

## 12. JAVASCRIPT – PART 5

- i. ES5 vs Es6 vs Es7
- ii. Event loop in JavaScript

**13. REACT – PART 1**

- i. React Intro
- ii. Install node
- iii. Create an app using create-react-app
- iv. Understanding basics of react app
- v. Understanding JSX
- vi. Understanding virtual DOMS, Single page apps

**14. REACT – PART 2**

- i. React Lifecycle
- ii. States
- iii. Class components vs functions components
- iv. Event handling
- v. Props
- vi. Building a basic Forms using React
- vii. Project 4 – Build Blog using React

**15. REACT – PART 3**

- i. Routes
- ii. Conditional Rendering
- iii. Pure Components
- iv. High Order components
- v. Controlled vs Uncontrolled components

**16. REACT – PART 4**

- i. Redux
- ii. Babel, webpack
- iii. Add Redux in a Project and build using webpack

**17. REACT – PART 5**

- i. Creating a Mock API Server
- ii. Axios
- iii. Server-Side Rendering
- iv. Project 4 - Fetch Data in Blog from an API

**18. REACT.JS – PART 6**

- i. SASS Overview

**19. NODE.JS – PART 1**

- i. Simple Server
- ii. Response Types – HTML, JSON
- iii. Routing
- iv. Express Intro
- v. Make a call from frontend to server
- vi. Project 4 – Create API to fetch blogs from DB

**20. NODE.JS – PART 2**

- i. Express Params and Query String
- ii. Express Middleware
- iii. API Authentication
- iv. JWT token, Passport.js
- v. Project 4 – Add API Authentication to Blog App

**21. NODE.JS – PART 3**

- i. Socket Programming
- ii. Project 5 - Build Chat App

**22. DATABASE – PART 1**

- i. SQL vs NO SQL
- ii. MongoDB / DynamoDB overview
- iii. Installing MongoDB
- iv. Connecting and inserting data
- v. Upload / Modify Tests of Online Quiz System using DynamoDB

**23. DATABASE – PART 2**

- i. Deleting and updating data
- ii. CRUD
- iii. Write functions to add/update a blog

**24. CODE REVIEW + DEPLOYMENT**

- i. Tools for code review
- ii. Standard coding conventions
- iii. Firebase
- iv. Deploy using Netlify
- v. Deploy using AWS Ec2
- vi. Get code reviewed by Software developers and deploy projects

**25. GOOGLE ANALYTICS + WEBENGAGE**

- i. GTM
- ii. Google Analytics
- iii. Facebook analytics
- iv. Webengage

**26. MAJOR PROJECT ASSIGNMENT (4 WEEKS)**

- i. Shopping App PRD sharing
- ii. Online Assessment App PRD sharing
- iii. Timeline Discussion (Every project in tech companies have timelines)
- iv. Weekly progress discussions

**27. REMOTE INTERNSHIP WITH Octadsoft(4 WEEKS)**

- i. This internship is valid only for students completing the course and projects.
- ii. Students will have choice to opt out.
- iii. You will work on problem statement of Octadsoft
- iv. You will go through complete software development life cycle.
- v. Your work will be deployed on Octadsft website and will be used by lakhs of students
- vi. You will be featured on Octadsoft Social Media Handles.

**CONTACT DETAILS**

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