


A Venture of Digitrix Infotech Pvt Ltd


Simplifying Successful Results

MERN Stack Development Program Industry-Ready Program (6 Months)

 Call / WhatsApp: 9041417268

 **Level:** Beginner to Job-Ready

 **Best For:** College students, freshers, aspiring full-stack developers

 **Goal:** A complete industry-oriented program to become a Full-Stack MERN Developer capable of building modern web applications using MongoDB, Express.js, React.js, and Node.js.

Highly suitable for software development roles in IT companies, startups, product-based firms, internships, and freelancing projects.

★ Month 1 – Web Development Fundamentals & JavaScript Basics

Explanation:

Students build strong web development foundations and understand how modern websites and applications work.

Topics Covered:

1. Web Fundamentals

- How the Internet Works
- Client vs Server Architecture
- Frontend vs Backend vs Database
- Introduction to APIs & Web Applications

2. HTML5

- Semantic HTML
- Forms & Validations
- Tables, Lists & Media
- Accessibility Basics

3. CSS3

- Box Model
- Flexbox & Grid
- Responsive Design
- Media Queries
- Animations & Transitions

4. JavaScript Fundamentals

- Variables & Data Types
- Operators & Conditions
- Loops & Functions
- Arrays & Objects
- DOM Manipulation Basics
- Events Handling

Practical Work:

- Build responsive static websites
- JavaScript mini-projects

- Interactive UI development
- Portfolio webpage creation

★ Month 2 – Advanced JavaScript & Backend Development Basics

Explanation:

Students move into advanced JavaScript concepts and begin backend development using Node.js & Express.js.

Topics Covered:

1. Advanced JavaScript

- ES6+ Features
- Arrow Functions
- Destructuring
- Spread & Rest Operators
- Modules
- Closures Basics

2. Asynchronous JavaScript

- Callbacks
- Promises
- Async / Await
- Fetch API
- Event Loop Concept

3. Node.js Fundamentals

- Introduction to Node.js

- NPM & Package Management
- File System Module
- Creating Servers

4. Express.js Basics

- Express Setup
- Routing
- Middleware
- Request & Response Handling

Practical Work:

- Build REST APIs
- Create backend server
- API testing using Postman
- User data handling project

★ Month 3 – MongoDB, Authentication & Backend APIs

Explanation:

Students learn database management, authentication systems, and production-ready backend development.

Topics Covered:

1. MongoDB Fundamentals

- NoSQL Concepts
- Collections & Documents
- CRUD Operations
- Data Modeling

2. Mongoose ODM

- Schemas & Models
- Validation
- Relationships
- Pagination & Filtering

3. Authentication & Authorization

- JWT Authentication
- Password Hashing (bcrypt)
- Role-Based Access Control
- Protected Routes

4. Backend Best Practices

- Error Handling
- Environment Variables
- API Security Basics
- Clean Folder Structure

Practical Work:

- Build Authentication System
- CRUD API Development
- Blog/Product Backend APIs
- Protected API Routes

★ Month 4 – React.js Frontend Development

Explanation:

Students build modern frontend applications using React.js and connect them with backend APIs.

Topics Covered:

1. React Fundamentals

- SPA Concepts
- JSX
- Components & Props
- State Management
- Conditional Rendering

2. React Hooks

- useState
- useEffect
- useContext
- Custom Hooks Basics

3. Routing & Forms

- React Router
- Dynamic Routing
- Forms Handling
- Form Validation

4. API Integration

- Fetch API & Axios
- Connecting Frontend with Backend
- Loading & Error Handling

Practical Work:

- Build React UI Projects
- Login/Register System

- Dashboard UI
- API-connected Applications

★ Month 5 – Full MERN Stack Projects & Advanced Concepts

Explanation:

Students combine frontend, backend, and database technologies to build complete MERN stack applications.

Topics Covered:

1. Full-Stack Integration

- Connecting React with Node & MongoDB
- Authentication Flow
- Frontend & Backend Protected Routes

2. Advanced React Concepts

- Context API
- State Management Patterns
- Performance Optimization Basics

3. Project Architecture

- Folder Structure
- Reusable Components
- API Service Layer
- Code Reusability

4. Deployment Basics

- Environment Setup
- Build Process
- Hosting Concepts
- Deployment on Vercel/Render (Overview)

Major Project Options:

- E-commerce Website
- Job Portal
- LMS Platform
- Task Management System
- Admin Dashboard

Practical Work:

- Build Full MERN Application
- Authentication + CRUD Operations
- Frontend & Backend Integration

★ Month 6 – Industry Practices, Projects & Placement Preparation

Explanation:

Students prepare for real IT industry work environments, interviews, freelancing, and professional development.

Topics Covered:

1. Advanced Backend Concepts (Awareness Level)

- MVC Architecture
- API Versioning

- Rate Limiting
- Basic System Design Concepts

2. Git & GitHub

- Git Commands
- Branching & Merging
- Pull Requests
- Collaboration Workflow

3. Testing & Debugging

- Debugging Techniques
- API Testing
- Error Fixing Strategies

4. Resume & Interview Preparation

- MERN Developer Resume Building
- GitHub Portfolio Optimization
- Project Presentation Skills
- Technical Interview Questions

5. Placement & Career Support

- Mock Interviews
- Coding Assignments Practice
- Freelancing Guidance
- Applying to IT Companies

Final Project:

- Full-Scale MERN Stack Project
- Live Deployed Application

- GitHub Project Portfolio

Final Outcomes After 6 Months

Students will be able to:

- Build complete MERN stack web applications
- Create RESTful APIs
- Work with MongoDB databases
- Develop responsive React frontends
- Handle authentication & authorization
- Deploy full-stack applications
- Crack MERN stack developer interviews
- Start freelancing or junior developer roles

Job Roles After Course

- MERN Stack Developer
- Full-Stack Web Developer
- React Developer
- Node.js Developer
- Backend Developer
- Junior Software Engineer

Why This Course is Popular

- High demand for MERN developers in IT industry
- One language (JavaScript) for frontend & backend
- Beginner-to-advanced roadmap
- Real-world project-based learning
- Excellent opportunities in startups & freelancing
- Strong portfolio & placement preparation



Freshers' Salary Range

₹15,000 – ₹30,000/month (depending on skills, projects & interview performance)

Our Location

 Digitrix Infotech Pvt Ltd.

3rd Floor, E-300, Industrial Area, Sector 75, Sahibzada Ajit Singh Nagar, Punjab

Our Websites

 Academy: <https://www.digitrixacademy.com/>


 Company: <https://www.digitrix.com/>

 **LIMITED SEATS – Don't Miss Out!**

 **Call / WhatsApp: 9041417268**

 **Get a FREE AI Career Guidance Session**

 **Become job-ready in AI, ML & Generative AI**

 **Build real-world projects & portfolio**

Our Partners



भारतीय प्रौद्योगिकी संस्थान मंडी

INDIAN INSTITUTE OF TECHNOLOGY MANDI

