



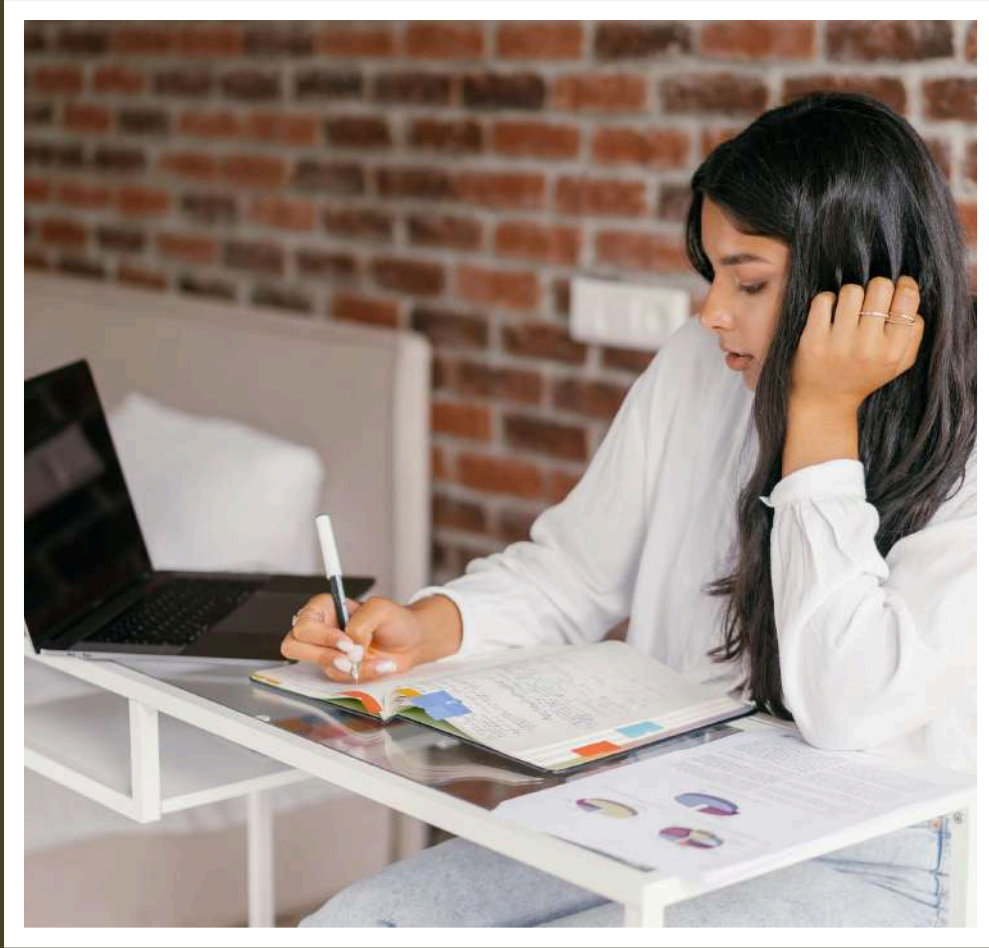
Scholar'sEdge Academy

"From Vision To Venture"

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COURSE BROCHURE

WELCOME TO OUR INSTITUTE

Welcome Message



Welcome to Scholar'sEdge Academy where learning meets opportunity and potential transforms into success.

We are delighted to have you join our growing community of ambitious learners, innovators, and future professionals. At Scholar'sEdge, we believe that education should go beyond textbooks and classrooms. Our mission is to equip you with practical skills, real-world experience, and the confidence needed to excel in today's competitive professional landscape.

At Scholar'sEdge Academy, we are committed to maintaining high standards of quality, professionalism, and industry relevance in our training programs. As part of our commitment to excellence, learners receive professionally recognized certifications that reflect their skills, dedication, and successful completion of the program.

Upon successful completion of our training programs, learners receive professionally recognized certifications that validate their skills, practical experience, and dedication to continuous growth. These credentials enhance career prospects, strengthen professional portfolios, and demonstrate industry readiness to employers worldwide.

Transforming Aspirations into Achievements by empowering students with industry-leading skills, real-world experience, and the mindset to thrive, innovate, and lead in tomorrow's world.

Our certifications are supported by recognized quality and business standards, providing learners with credible credentials that enhance their professional profiles and demonstrate their commitment to continuous learning. These certifications serve as valuable proof of achievement and can help strengthen resumes, portfolios, and career opportunities in today's competitive job market.

Company Over View



Company Culture

At Scholar'sEdge Academy, we cultivate a culture of learning, innovation, collaboration, and growth. We believe education should be practical, supportive, and empowering, where every learner feels encouraged to ask questions, build confidence, and develop real-world skills.

Our History

Scholar'sEdge Academy exists to bridge the gap between academic learning and industry requirements by focusing on practical skills, confidence-building, and career readiness. Through hands-on, skill-based education, we empower learners to transform their knowledge into real-world success.

Our Mission

To empower students, graduates, and professionals with industry-relevant, practical skills through hands-on training, expert mentorship, and real-world experience, enabling them to build successful careers with confidence and competence.

The Goals

At Scholar'sEdge Academy, our goal is to bridge the gap between traditional education and industry expectations by transforming learners into confident, skilled, and job-ready professionals. We aim to provide practical, hands-on learning experiences that empower students to build real-world expertise, gain valuable industry exposure, and achieve long-term career success.

Our Value

01 Practical Learning

We believe knowledge becomes truly valuable when it is applied in real-world situations. Through hands-on training, live projects, and practical problem-solving, learners gain industry-relevant experience. Our approach ensures students develop the skills and confidence needed to succeed in their careers.

02 Integrity

We uphold the highest standards of honesty, transparency, and professionalism in everything we do. By fostering trust, accountability, and ethical practices, we create a learning environment where students can grow with confidence and credibility.

03 Continuous Growth

We believe learning is a lifelong journey. By encouraging curiosity, adaptability, and continuous skill development, we empower learners to stay relevant, embrace new opportunities, and achieve long-term success in an ever-evolving world.



Enhancing Your Learning Journey



Weekend Activities & Skill Development

Engage in interactive workshops, coding challenges, expert talks, and skill-building sessions designed to enhance your learning experience.

Develop technical expertise, confidence, leadership, and professional skills beyond the classroom



ISO & MSME Recognition

Scholar'sEdge Academy is committed to delivering quality, industry-focused education aligned with professional standards. Our ISO-backed quality practices and MSME recognition reflect our dedication to excellence, credibility, and continuous improvement. Learners benefit from trusted certifications that enhance their professional profile and demonstrate their commitment to skill development.



Internship Opportunities

Learning goes beyond the classroom at Scholar'sEdge Academy. Through our structured internship programs, students gain practical exposure to real-world projects, industry workflows, and professional environments. This hands-on experience helps bridge the gap between learning and employment while strengthening career readiness.



Learning Management System (LMS)

Our advanced Learning Management System provides students with seamless access to learning resources, course materials, assignments, project guidelines, and progress tracking tools. The LMS ensures a flexible, organized, and engaging learning experience that supports continuous growth both inside and outside the classroom.

What To Expect

What We Expect From You

At Scholar'sEdge Academy, you will experience practical, hands-on learning that prepares you for real-world challenges. Our industry-focused programs combine expert mentorship, live projects, and skill-based training to build your confidence and expertise. You will gain valuable experience, create a professional portfolio, and develop career-ready skills. Every step of your journey is designed to help you learn, grow, and succeed.

What We Expect From You

At Scholar'sEdge Academy, we expect learners to approach their journey with dedication, curiosity, and a willingness to learn. Active participation, consistent effort, and a commitment to completing projects and assignments are essential for success. By embracing challenges, seeking continuous improvement, and maintaining a positive attitude, you can make the most of every opportunity and achieve your career goals.

Success is a partnership between the academy and the learner. We expect you to be committed, proactive, and eager to learn, while taking ownership of your growth and development. Attend sessions regularly, engage actively in projects and discussions, and be open to feedback and continuous improvement. With the right mindset and dedication, you can unlock your full potential and achieve meaningful career success.



WHY CHOOSE US

TRANSFORMING POTENTIAL INTO SUCCESS

01 Industry-Focused Learning

Our curriculum is designed to align with current industry demands and emerging technologies. Learn skills that employers value and apply them in real-world scenarios.

02 Expert Mentorship & Hands-On Experience

Learn directly from industry professionals while working on practical projects and case studies. Gain the confidence and experience needed to solve real business challenges.



03 Career-Readiness with the 4+2 Model

Benefit from 4 months of intensive training followed by 2 months of internship experience. Build a professional portfolio and graduate with practical industry exposure.



Certifications & Recognition

Our commitment to quality, skill development, and industry-oriented learning helps students build a strong professional foundation that is recognized and valued by employers worldwide.



MSME
MICRO, SMALL & MEDIUM ENTERPRISES
सूक्ष्म, लघु एवं मध्यम उद्यम
OUR STRENGTH • हमारी शक्ति

Ministry of MSME, Govt. of India



ISO Certified Organization

Committed to internationally recognized quality standards, ensuring structured learning, professional training practices, and continuous improvement in education delivery.

NSDC Skill Development Focus

Focused on developing job-ready skills, practical competencies, and employability through industry-oriented training and experiential learning.

AICTE-Aligned Learning Approach

Our training methodology is designed to support industry-relevant technical education, practical learning, and career readiness aligned with modern professional standards.

MSME Registered Enterprise

Recognized by the Government of India, promoting innovation, entrepreneurship, skill development, and industry-focused learning opportunities.

Students benefit from learning in an institution that follows recognized quality standards, industry-oriented practices, and skill development frameworks designed to enhance employability and professional growth.

Student Benefits :

- Learn in a quality-focused and professionally managed environment
- Gain industry-relevant skills aligned with current market demands
- Enhance credibility with certifications from a recognized institution
- Improve employability through practical and job-oriented training
- Benefit from structured learning, projects, and internship opportunities
- Build confidence with training that follows recognized standards

Your Journey to Success

The journey continues with internship opportunities and professional exposure, allowing you to gain valuable experience in a real work environment. By the end of the program, you will have the skills, practical experience, and confidence needed to pursue career opportunities and succeed in today's competitive job market.



Learn

Build a strong foundation through structured, industry-focused training guided by experienced mentors. Gain the knowledge and technical skills needed to excel in your chosen field.



Practice

Apply your learning through hands-on projects, assignments, and real-world problem-solving activities. Develop confidence by transforming theoretical concepts into practical solutions.



Experience

Gain valuable industry exposure through internships, mentorship, and collaborative project work. Learn professional practices and understand how skills are applied in real workplace environments.



Achieve

Graduate with a professional portfolio, recognized certifications, and job-ready skills. Step into your career with confidence, credibility, and the ability to make an impact.



FULL STACK DEVELOPMENT

Build Modern Web Applications from Frontend to Backend
Duration: 6 Months (4 Months Training + 2 Months Internship)

Career Opportunities

- Full Stack Developer
- Frontend Developer
- Backend Developer
- Software Engineer
- Web Application Developer
- Product Engineer
- Technical Consultant

Full Stack Development is the process of building and managing both the frontend (client-side) and backend (server-side) components of a web application. A Full Stack Developer has the skills to work across the entire application, from designing user interfaces to developing server logic, managing databases, and deploying applications.

Why Learn Full Stack Development?

- Build complete web applications independently
- Understand the entire software development lifecycle
- Work on both frontend and backend technologies
- Develop real-world industry projects
- Access diverse career opportunities in software development
- Become highly employable in startups, product companies, and enterprises

How Full Stack Development Works

When a user interacts with a website:

- The Frontend collects user input.
- The Backend processes the request.
- The Database stores or retrieves data.
- The Backend sends the response.
- The Frontend displays the result to the user.

At ScholarsEdge Academy, students learn Full Stack Development through a hands-on, project-based approach, gaining real-world experience in frontend development, backend engineering, database management, cloud deployment, AI-powered development, and industry internships.

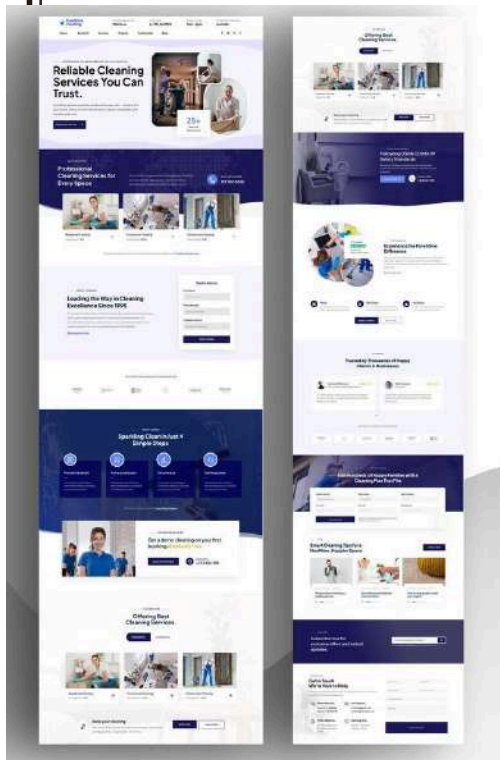
PERN STACK DEVELOPMENT

PostgreSQL + Express.js + React.js + Node.js

Duration: 6 Months (4 Months Training + 2 Months Internship)

PROGRAM OVERVIEW

Master modern full-stack web development by building dynamic, scalable, and industry-ready web applications using the PERN Stack. This program is designed with a hands-on, project-based approach that equips students with real-world development experience, AI-powered coding skills, cloud deployment expertise, and internship exposure.



What You'll Learn

- ✓ Frontend Development with React.js
- ✓ Backend Development with Node.js & Express.js
- ✓ PostgreSQL Database Design & Management
- ✓ REST API Development
- ✓ Authentication & Security
- ✓ AI Integration in Applications
- ✓ Cloud Deployment & DevOps Basics
- ✓ Agile Project Management
- ✓ Industry-Level Project Development

TRAINING STRUCTURE

Phase 1: Foundation & Frontend Development

Month 1

Module 1: Programming Fundamentals & Web Foundations

- Software Development Life Cycle (SDLC)
- Agile & Scrum Methodology
- Problem Solving & Algorithms
- Flowcharts & Pseudocode
- Internet & Web Architecture
- Developer Tools Setup
- Git & GitHub Essentials
- AI Tools for Developers

Module 2: HTML5 Professional Development

- HTML Structure & Semantic Elements
- Forms & Validations
- Tables & Multimedia
- Accessibility Standards
- SEO-Friendly HTML

Module 3: CSS3 & Responsive Web Design

- CSS Fundamentals
- Flexbox & Grid Layouts
- Responsive Design
- Animations & Effects
- Bootstrap 5
- Tailwind CSS

Projects

Phase 2: Modern Frontend Engineering

Month 2

Module 4: JavaScript Programming

- Variables & Data Types
- Functions & Scope
- Arrays & Objects
- Loops & Conditions
- DOM Manipulation
- Event Handling
- Form Validation

Module 5: Advanced JavaScript (ES6+)

- Arrow Functions
- Destructuring
- Spread & Rest Operators
- Modules
- Promises
- Async/Await
- Error Handling

Module 6: React.js Development

- React Fundamentals
- Components & JSX
- Props & State
- React Hooks
- Context API
- React Router
- Form Handling & Validation

Module 7: API Integration & Frontend Architecture

- REST API Consumption
- Axios & Fetch API
- Authentication UI

- Protected Routes
- State Management Basics
- Reusable Component Design

Projects

Phase 3: Backend Engineering & Database Development

Month 3

Module 8: Node.js Fundamentals

- Node.js Architecture
- Event Loop
- NPM Ecosystem
- Modules & File System
- Environment Variables

Module 9: Express.js Backend Development

- Express Framework
- Routing
- Middleware
- Error Handling
- REST API Development
- API Testing with Postman

Module 10: PostgreSQL Database Engineering

- Database Design
- ER Diagrams
- SQL Fundamentals
- CRUD Operations
- Joins & Relationships
- Views & Functions
- Stored Procedures
- Triggers
- Query Optimization
- Indexing Techniques

Module 11: Authentication & Security

- JWT Authentication
- Password Encryption
- User Authorization

- Role-Based Access Control
- Security Best Practices

Projects

Phase 4: Full Stack Product Development

Month 4

Module 12: Full Stack Integration

- React + Express Integration
- API Communication
- State Management
- Authentication Flow

Module 13: AI-Powered Application Development

- AI APIs Integration
- Chatbot Development
- Content Generation Systems
- AI Automation Workflows

Module 14: Cloud Deployment & DevOps Basics

- Git Workflow
- GitHub Collaboration
- Deployment Strategies
- Vercel Deployment
- Render Deployment
- PostgreSQL Hosting
- CI/CD Fundamentals

Module 15: Product Engineering & System Design

- Application Architecture
- Code Reviews
- Documentation Standards
- Agile Development Process
- Project Planning

Capstone Project

INDUSTRY INTERNSHIP PROGRAM

Month 5: Internship Sprint – I Industry Exposure

- Agile Team Collaboration
- Jira Project Management
- Git Branching Strategies
- Sprint Planning
- Code Reviews
- Module Development

Deliverables

- Team-Based Development Tasks
- Documentation
- Weekly Project Reviews

Month 6: Internship Sprint – II Real Project Execution

- Feature Development
- Bug Fixing & Optimization
- Testing & Deployment
- Client Requirement Analysis
- Final Project Presentation

Deliverables

- Live Hosted Application
- Internship Report
- Technical Documentation
- GitHub Portfolio

TOOLS & TECHNOLOGIES

Frontend

- HTML5
- CSS3
- Bootstrap 5
- Tailwind CSS
- JavaScript ES6+
- React.js

Backend

- Node.js
- Express.js

Database

- PostgreSQL

Development Tools

- VS Code
- Git
- GitHub
- Postman
- PgAdmin
- Figma
- Jira

AI Tools

- ChatGPT
- GitHub Copilot
- Gemini AI
- Claude AI
- Cursor AI

Deployment Platforms

- Vercel
- Render
- Railway
- Supabase

ADDITIONAL CAREER DEVELOPMENT MODULES

- Resume Building
- LinkedIn Profile Optimization
- GitHub Portfolio Development
- Technical Communication Skills
- Mock Interviews
- Aptitude & Reasoning
- Freelancing Fundamentals
- Startup & Entrepreneurship Basics

ADDITIONAL CAREER ACCELERATOR MODULES

Professional Development

- Resume Building
- LinkedIn Branding
- GitHub Portfolio Development
- Technical Communication Skills

Placement Readiness

- Aptitude Training
- Mock Interviews
- HR Interview Preparation
- Technical Interview Preparation

Freelancing & Entrepreneurship

- Freelancing Platforms Overview
- Client Communication
- Proposal Writing
- Startup Development Basics

MERN STACK DEVELOPMENT

MongoDB + Express.js + React.js + Node.js

Duration: 6 Months (4 Months Training + 2 Months Internship)

Program Overview

Master the world's most popular JavaScript Full Stack Technology used by startups, SaaS companies, product-based organizations, and modern web platforms.

The MERN Stack program focuses on developing scalable, high-performance, cloud-ready applications using JavaScript across the entire technology stack. Students learn modern frontend engineering, backend API development, NoSQL database design, AI-assisted development, cloud deployment, and startup-oriented product development.

WHY MERN STACK?

Industry Applications

- SaaS Products
- Startup Applications
- Social Media Platforms
- E-Commerce Applications
- AI-Powered Web Applications
- Real-Time Applications
- Project Management Systems
- Content Management Platforms

TRAINING STRUCTURE

MONTH 1

WEB DEVELOPMENT FOUNDATIONS

Module 1: Programming Logic & Development Fundamentals

Topics Covered

- Software Development Lifecycle
- Agile Methodology
- Scrum Framework
- Problem Solving Techniques
- Flowcharts
- Algorithms
- Git & GitHub
- AI-Powered Development

Hands-On Activities

- GitHub Portfolio Setup
- LinkedIn Profile Optimization
- Coding Challenges

Module 2: HTML5 & CSS3

Topics Covered

- Semantic HTML
- Forms & Validations
- Responsive Design

- CSS Flexbox
- CSS Grid
- Accessibility Standards

Projects

- Personal Portfolio Website
- Educational Website

Module 2: HTML5 & CSS3

Topics Covered

- Semantic HTML
- Forms & Validations
- Responsive Design
- CSS Flexbox
- CSS Grid
- Accessibility Standards

Projects

- Personal Portfolio Website
- Educational Website

Module 3: Bootstrap & Tailwind CSS

Topics Covered

- Modern UI Design
- Responsive Components
- Utility-Based Development

Projects

- Startup Landing Page
- Product Showcase Website

Module 4: JavaScript Fundamentals

Topics Covered

- Variables & Data Types
- Functions
- Arrays & Objects
- Loops
- DOM Manipulation
- Event Handling

Projects

- Calculator
- Quiz Application

Month 1 Outcome

Students create:

- Portfolio Website
- Product Landing Page
- Interactive JavaScript Applications

MONTH 2

MODERN REACT DEVELOPMENT

This is where MERN differs significantly from PERN.

Module 5: Advanced JavaScript

Topics Covered

- ES6+
- Closures
- Modules
- Promises
- Async/Await
- Error Handling

Module 6: React.js Fundamentals

Topics Covered

- JSX
- Components
- Props
- State
- Event Handling

Projects

- Student Dashboard
- Task Management App

Module 7: Advanced React Engineering

Topics Covered

- React Hooks
- Context API
- React Router
- Lazy Loading
- Code Splitting
- Custom Hooks

Projects

- Expense Tracker
- Employee Portal

Module 8: Redux Toolkit & State Management

(Unique MERN Module)

Topics Covered

- Redux Architecture
- Redux Toolkit
- Global State Management
- Async Operations

Projects

- E-Commerce Cart
- Product Management Dashboard

Module 9: Next.js Fundamentals

(Trending Industry Skill)

Topics Covered

- Server Side Rendering
- Static Site Generation
- SEO Optimization

Project

- Company Website with Next.js

Month 2 Outcome

Students become React Specialists capable of building modern frontend applications.

Month 2 Outcome

Students become React Specialists capable of building modern frontend applications.

MONTH 3

NODE.JS BACKEND & NOSQL DATABASE DEVELOPMENT

Module 10: Node.js Backend Engineering

Topics Covered

- Event Loop
- Streams
- File System
- Modules
- NPM Ecosystem

Module 11: Express.js API Development

Topics Covered

- Routing
- Middleware
- Error Handling
- REST APIs
- API Security

Project

- Blogging API

Module 12: MongoDB Database Engineering

MongoDB Fundamentals

- Collections
- Documents
- BSON Data Structure
- CRUD Operations

MongoDB Advanced

- Aggregation Framework
- Indexing
- Schema Design
- Data Modeling

MongoDB Atlas

- Cloud Database Hosting
- Security Configuration

Mongoose ODM

- Models
- Validation
- Relationships
- Middleware

Projects

- Inventory Database
- User Management System

Module 13: Authentication & Authorization

Topics Covered

- JWT Authentication
- Role-Based Access Control
- OAuth Basics
- Social Login Integration

Project

- Authentication System

Month 3 Outcome

Students build secure backend applications using MongoDB and Express.js.

MONTH 4

FULL STACK PRODUCT DEVELOPMENT

Module 14: MERN Stack Integration

Topics Covered

- Frontend + Backend Integration
- API Communication
- Authentication Flow
- Protected Routes

Module 15: Real-Time Application Development

Unique MERN Module

Topics Covered

- WebSockets
- Socket.IO
- Real-Time Communication

Projects

- Chat Application
- Live Notification System

Module 16: AI-Powered MERN Applications

Topics Covered

- OpenAI API Integration
- Gemini API Integration
- AI Chatbots
- AI Content Generation

Projects

- AI Resume Builder
- AI Study Assistant

Module 17: Cloud Deployment & DevOps

Topics Covered

- Git Workflow
- CI/CD Basics
- Deployment Strategies
- MongoDB Atlas Deployment

Platforms

- Vercel
- Render
- Netlify

CAPSTONE PROJECTS

Startup & Product-Based Projects

Students Choose One

- E-Commerce Platform
- SaaS CRM Application
- Social Media Platform
- Learning Management System
- Project Management Tool
- AI Content Generator
- Startup Founder Dashboard
- Real-Time Collaboration Platform

MONTH 5

INDUSTRY INTERNSHIP SPRINT I

Industry Practices

- Agile Workflow
- Git Collaboration
- Sprint Planning
- Jira Management

Deliverables

- Feature Development
- Code Reviews
- Documentation

MONTH 6

INDUSTRY INTERNSHIP SPRINT II

Real Project Experience

- Client Requirements
- Feature Enhancements
- Deployment
- Presentation Skills

Deliverables

- Live Hosted Application
- GitHub Portfolio
- Internship Documentation

MEAN STACK ENTERPRISE APPLICATION ENGINEERING

**Duration: 6 Months (4 Months Training + 2 Months
Internship)**

Career Path:

- MEAN Stack Developer
- Angular Developer
- Enterprise Application Developer
- Full Stack Software Engineer
- ERP Developer
- Software Consultant

PHASE 1

DIGITAL FOUNDATIONS & SOFTWARE THINKING

Module 1: Tech Career Launchpad

Learning Objectives

Build strong programming logic and understand how software products are developed in the industry.

Topics Covered

Software Industry Fundamentals

- IT Industry Overview
- Product vs Service Companies
- Software Roles & Responsibilities
- Career Opportunities in Full Stack Development

Software Development Lifecycle

- Requirement Gathering
- Analysis
- Design
- Development
- Testing
- Deployment
- Maintenance

Agile & Scrum Methodology

- Agile Principles
- Scrum Framework
- Sprint Planning
- Daily Standups
- Retrospectives

Programming Logic

- Algorithms
- Flowcharts
- Pseudocode
- Problem Solving Techniques

AI for Developers

- ChatGPT
- GitHub Copilot
- Cursor AI
- Prompt Engineering

Practical Activities

- GitHub Setup
- LinkedIn Profile Optimization
- 25 Coding Challenges

Mini Project

Developer Portfolio Planning

Module 2: Modern Web Design Studio

Learning Objectives

Develop visually appealing and responsive business interfaces.

Topics Covered

- HTML5 Professional Development
- Semantic HTML
- Forms & Validation
- Tables
- Multimedia
- Accessibility Standards
- CSS3 Professional Styling
- Selectors
- Box Model
- Positioning
- Flexbox
- CSS Grid
- Responsive Design
- Bootstrap 5
- Grid System
- Components
- Utilities
- Tailwind CSS
- Utility-Based Styling
- Responsive Design
- Custom Components
- Practical Activities
- Company Website
- Service Website
- Educational Portal
- Mini Project
- Corporate Business Website

Module 3: Interactive Web Engineering

Learning Objectives

- Build interactive user experiences using JavaScript and TypeScript.
- Topics Covered
- JavaScript Fundamentals
- Variables
- Data Types
- Operators
- Conditional Statements
- Loops
- Functions

Mini Project

Corporate Business Website

Module 3: Interactive Web Engineering

Learning Objectives

Build interactive user experiences using JavaScript and TypeScript.

Topics Covered

JavaScript Fundamentals

- Variables
- Data Types
- Operators
- Conditional Statements
- Loops
- Functions

Advanced JavaScript

- Objects
- Arrays
- Closures
- Callbacks
- Promises
- Async/Await

DOM Manipulation

- Event Handling
- Form Validation
- Dynamic Content

TypeScript Fundamentals

- Data Types

- Interfaces
- Classes
- Objects
- Generics

Practical Activities

- Calculator
- Quiz Application
- Dynamic Dashboard Widgets

Project

Employee Attendance Tracker

PHASE 2

ANGULAR ENTERPRISE DEVELOPMENT

Module 4: Angular Application Builder

Learning Objectives

Master Angular fundamentals for enterprise application development.

Topics Covered

Angular Fundamentals

- Angular Architecture
- Components
- Templates
- Modules
- Data Binding

Angular CLI

- Project Creation
- Project Structure
- Component Generation

Directives

- Structural Directives
- Attribute Directives

Pipes

- Built-In Pipes
- Custom Pipes

Practical Activities

- Employee Dashboard
- Product Management Interface

Project

Admin Dashboard Application

Module 5: Enterprise Service Architecture

Learning Objectives

Learn scalable frontend architecture.

Topics Covered

Services

- Service Creation
- Service Injection

Dependency Injection

- Providers
- Service Lifecycle

Angular Routing

- Navigation
- Lazy Loading

State Sharing

- Services as Data Stores

Practical Activities

- Multi-Module Application

Project

Department Management System

Module 6: Smart Forms & Workflow Automation

Learning Objectives

Build enterprise-grade business forms.

Topics Covered

Template Driven Forms

Reactive Forms

Dynamic Form Generation

Advanced Validation

Form Security

Practical Activities

- Employee Registration Form
- Loan Application Form
- Insurance Application Form

Project

HR Management Portal

Module 7: Reactive Programming & Enterprise Dashboards

Learning Objectives

Create real-time enterprise systems.

Topics Covered

RxJS

- Observables
- Subjects
- Operators

Reactive Data Flow

Dashboard Development

KPI Monitoring

Real-Time Data Updates

Practical Activities

- Live Dashboard
- Sales Monitoring Portal

Project

Business Analytics Dashboard

PHASE 3

BACKEND & ENTERPRISE DATA ENGINEERING

Module 8: API Development Masterclass

Learning Objectives

Develop secure and scalable APIs.

Topics Covered

Node.js

- Event Loop
- Modules
- File System
- Streams

Express.js

- Routing
- Middleware
- Error Handling
- REST Architecture

API Design Standards

- Resource Naming
- Versioning
- Response Structures

Practical Activities

- Employee API
- Inventory API

Project

Corporate API Gateway

Module 9: Enterprise Database Architecture

Learning Objectives

Design scalable business databases.

Topics Covered

MongoDB Fundamentals

- Collections
- Documents
- CRUD Operations

Advanced MongoDB

- Aggregation Pipeline
- Indexing
- Data Modeling

MongoDB Atlas

- Cloud Databases
- Security Configuration

Practical Activities

- CRM Database Design
- Inventory Database Design

Project

Enterprise CRM Database

Module 10: Secure Access & Identity Management

Learning Objectives

Implement enterprise-level security.

Topics Covered

Authentication

- JWT
- Sessions
- Cookies

Authorization

- Role-Based Access Control
- Permissions

Security

- Password Hashing
- Data Protection
- API Security

Project

Multi-Role Enterprise Portal

Module 11: API Documentation & Quality Engineering

Topics Covered

Swagger/OpenAPI

API Testing

Postman Collections

Error Logging

Debugging

Quality Assurance Basics

Practical Activities

- API Documentation
- API Test Cases

Project

Enterprise API Documentation Suite

PHASE 4

ENTERPRISE SOLUTION DEVELOPMENT

Module 12: Full Stack Integration Studio

Topics Covered

Angular + Node Integration

API Communication

Authentication Flow

Data Synchronization

Enterprise Architecture

Project

Enterprise Resource Management System

Module 13: Enterprise System Design Lab

Topics Covered

MVC Architecture

Layered Architecture

Design Patterns

Scalable Code Organization

Enterprise Coding Standards

Practical Activities

- Architecture Planning
- Code Reviews

Module 14: Business Intelligence & Reporting Hub

Topics Covered

Dashboard Reporting

KPI Analytics

Business Reports

Charts & Visualizations

Project

Management Reporting Portal

Module 15: AI-Powered Enterprise Solutions

Topics Covered

AI Integration

AI Chatbots

AI Helpdesk Systems

Document Automation
AI Productivity Tools
Project
Smart Enterprise Assistant

Module 16: CloudOps & Enterprise Deployment

Topics Covered
Git Workflow
GitHub Collaboration
CI/CD Fundamentals
Azure Fundamentals
Cloud Deployment
Monitoring & Maintenance
Project
Production Deployment of Enterprise Application

CAPSTONE SPECIALIZATION TRACKS

Students Select One:

- ERP Management System
- Hospital Management System
- Banking Management Portal
- HR & Payroll Management System
- Inventory & Procurement Management System
- School & College ERP Platform
- Insurance Management System
- Logistics & Supply Chain Management System

INDUSTRY INTERNSHIP PROGRAM (2 MONTHS)

Sprint 1 – Enterprise Development Experience

- Requirement Analysis
- Sprint Planning
- Feature Development
- Code Reviews
- Documentation

Sprint 2 – Enterprise Project Delivery

- Testing
- Deployment
- Bug Fixing
- Client Demonstration
- Technical Presentation

STUDENT OUTCOME