

Full Stack Web Development

The course covers complete frontend and backend web development, AI integration, practical projects, deployment and production practices.

Duration 12 Months	Training Mode Offline	Certification Industry Certificate	Practical Labs 100% Hands-on
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Tools & Tech: HTML5 • CSS3 • Bootstrap 5 • JavaScript ES6+ • React.js • Redux • Node.js • Express.js • MongoDB • Mongoose • REST APIs • JWT Authentication • Git • GitHub • Deployment • Generative AI • LLM APIs • Prompt Engineering • AI Chatbots • Streaming Responses • Embeddings • Semantic Search • Vector Databases • RAG • Document AI • AI Function Calling • AI Agents • Multimodal AI

Detailed Course Curriculum & Modules

MODULE 01 HTML & CSS Fundamentals - Introduction to Frontend & HTML Basics, Semantic Tags - CSS Essentials, Box Model, Flexbox, Media Queries	MODULE 02 Bootstrap 5 Grid System, Typography, Cards, Modals, Forms & Navbar
MODULE 03 JavaScript — Beginner to Advanced - Variables, Loops, Functions, Arrays, Objects, DOM - Promises, async/await, Fetch API & AJAX	MODULE 04 React.js Components, JSX, React Hooks, Routing, Redux
MODULE 05 Node.js & Express.js - Node Fundamentals & Core Modules (fs, path, http, URL) - Express Fundamentals, Routing, Middleware, REST APIs	MODULE 06 MongoDB & Database Development - Database Fundamentals (SQL vs NoSQL), CRUD Operations - Mongoose Schemas, Models, Validation, Queries, Middleware
MODULE 07 Auth & Security - JWT Authentication, Password Hashing with bcrypt - Environment variables, CORS, Helmet, Rate Limiting, Input Validation	MODULE 08 File Uploads & External APIs - Multer, Single/Multiple File Uploads, GCS Integration - Fetching & handling External APIs
MODULE 09 Full Stack Integration - Connecting React Frontend with Node.js Backend - JWT Auth in React, State Management, CRUD from Frontend	MODULE 10 Deployment & Git Git & GitHub, Env Variables in Production, Build Process, Hosting
MODULE 11 AI Integration & LLMs LLM Fundamentals, Model Providers, MERN AI Integration	MODULE 12 Prompt Engineering Effective Prompts, System/User/Assistant Prompts, JSON Outputs
MODULE 13 Building AI Chatbots Designing React Chat UI, Backend connection, Streaming responses (SSE)	MODULE 14 Vector Databases & RAG Embeddings, Semantic Search, Vector DBs, RAG Architecture
MODULE 15 AI Agents & Function Calling AI Tools, Function Calling, Multimodal AI, AI Security	

Practical Projects & Industry Capstones

- Authentication System with Login & Registration
- Task Management Application
- Blog Application with Admin Panel
- Full Stack CRUD Application
- REST API Project
- E-commerce Application
- Final Full Stack MERN Project
- Basic AI Chatbot
- ChatGPT-Style Conversational Interface
- AI Chatbot with Conversation History
- Streaming AI Chat Application
- AI Content Generator
- AI-Powered Text Summarizer
- AI-Powered Semantic Search Engine
- Chat with PDF Application
- RAG-Based Document Question-Answering System
- Custom Knowledge Base AI Chatbot
- Website-Based Customer Support AI Assistant
- AI Chatbot with Source Citations
- AI Assistant with Function Calling and External Tools
- AI-Powered Full Stack MERN Application
- Final RAG-Based AI Chatbot Project

■ Industry Certification

Authorized certificate verified globally via online portal.

■ 100% Placement Support

Resume review, mock interviews, and recruiter connections.

■ Lab Access & Mentorship

Dedicated workstation lab hours with expert guidance.