

Full Stack Development with AI Tools

Build complete web applications from frontend UI to backend APIs using modern web technologies and AI-assisted workflows.

PROGRAM SNAPSHOT

4 Months Live Training	1 Year LMS Access	Recorded Sessions	Capstone Project	90% Attendance Expected	80% Projects Completion
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PROGRAM OVERVIEW

The Full Stack Development with AI Tools program is a 4-month online live training program designed to help learners build complete web applications using frontend, backend, database, API, authentication, deployment, and AI-assisted development workflows. The program focuses on practical coding, GitHub portfolio building, real-time assignments, and a final capstone project.

Program Highlights

- 4 months online live training
- LMS access for 1 year with class recordings
- Assignments, case studies, and mentor feedback
- AI tools integrated into the learning workflow
- Capstone project in the final phase
- Certificate eligibility based on attendance, assignment completion, fee clearance, and policy compliance
- Frontend, backend, database, API, and deployment training
- AI-assisted coding, debugging, and productivity workflows

Key Skills You Will Master

- HTML & CSS	- JavaScript programming
- React development	- Next.js application development
- Tailwind CSS and UI components	- Node.js and Express APIs
- MongoDB and PostgreSQL basics	- Authentication and authorization
- API testing with Postman	- Git, GitHub, and deployment
- AI-assisted coding	- Portfolio project building

Tools You Will Work With

HTML5	CSS3	JavaScript	TypeScript basics
React.js	Next.js	Tailwind CSS	shadcn/ui basics
Node.js	Express.js	MongoDB	PostgreSQL basics
Supabase/Firebase basics	Git	GitHub	Postman

Vercel	Render	ChatGPT	GitHub Copilot
Cursor	v0	OpenAI API basics	

What You Will Build

<p>Responsive Websites</p> <p>Create mobile-friendly landing pages and websites.</p>	<p>Frontend Applications</p> <p>Build dynamic React and Next.js applications.</p>	<p>RESTful APIs</p> <p>Develop backend APIs using Node.js and Express.</p>	<p>Database Projects</p> <p>Connect apps with MongoDB/PostgreSQL/Supabase basics.</p>	<p>Capstone Portfolio</p> <p>Deploy and present a full-stack application.</p>
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Learn by doing with live classes, assignments, projects, capstone work, LMS recordings, and mentor feedback.

Important Note: Careerpedia does not guarantee placements, employment, job offers, interview calls, salary outcomes, or employer selection. The program focuses on training, skill building, projects, assessments, and structured learning support.

DETAILED COURSE CURRICULUM

Full Stack Development with AI Tools

The curriculum below is structured module-wise so learners can clearly understand exactly what is covered, what tools are used, and what practical work is expected.

Module 1: Web Development Fundamentals

This module builds the foundation for web development and teaches learners how websites work from browser to server.

Topics Covered

- How websites work
- Client-server architecture
- Domain, hosting, browser, and server basics
- HTML document structure
- Semantic HTML
- Text, links, images, lists, tables, and forms
- Input fields and form validation basics
- HTML accessibility basics
- CSS selectors, properties, and values
- Box model
- Display properties
- Positioning basics
- Flexbox and CSS Grid
- Media queries
- Responsive design
- Mobile-first design
- Landing page structure

Practical Activities

- Personal profile webpage
- Responsive landing page
- Form-based webpage
- Static website mini-project

Module 2: JavaScript Programming

This module introduces learners to programming logic using JavaScript and prepares them for frontend application development.

Topics Covered

- JavaScript introduction
- Variables and constants
- Data types
- Operators
- Conditional statements
- Loops
- Functions
- Arrays and objects
- Array methods
- String methods
- Date and Math objects
- DOM manipulation
- Events and event listeners
- Form handling
- Local storage basics
- JSON
- Fetch API
- Promises
- Async and await
- Error handling
- Basic debugging

Practical Activities

- Calculator app
- To-do list app
- API-based weather app
- Form validation project

Module 3: Git, GitHub, and Developer Workflow

This module helps learners work like developers by using version control, repositories, and project documentation.

Topics Covered

- Version control basics
- Git installation and setup
- Git commands
- Repository creation
- Commit, push, and pull
- Branching basics
- GitHub repository management
- README file writing
- Project documentation
- Code organization
- Developer productivity workflow
- Portfolio repository setup

Practical Activities

- GitHub profile setup
- Project repository creation
- README documentation
- Code push and version control practice

Module 4: React.js Frontend Development

This module trains learners to build component-based frontend applications using React.

Topics Covered

- React introduction
- Component-based architecture
- JSX
- Props and state
- Event handling
- Conditional rendering
- Lists and keys
- Forms in React
- Controlled components
- React hooks: useState, useEffect, useRef basics
- Custom reusable components
- React Router
- API integration in React
- Loading and error states
- Folder structure
- Component reusability

Practical Activities

- React component assignment
- Multi-page React app
- API-integrated React project
- Dashboard UI project

Module 5: Modern UI Development

This module focuses on building clean, responsive, production-style UI using Tailwind and component-based design.

Topics Covered

- Tailwind CSS introduction
- Utility-first styling
- Responsive layouts
- Grid-based design
- Cards, buttons, forms, and modals
- Dashboard layout
- Navbar and sidebar
- UI consistency
- Design-to-code workflow
- Component libraries introduction
- shadcn/ui basics
- Accessibility basics
- UI polish and micro-interactions

Practical Activities

- SaaS dashboard UI
- Admin panel UI
- Responsive website UI
- Component library mini-assignment

Module 6: Next.js Application Development

This module introduces learners to modern React application development using Next.js.

Topics Covered

- Introduction to Next.js
- App Router basics
- Pages and layouts
- Server components and client components
- Routing
- Dynamic routes
- API routes basics
- Data fetching basics
- Environment variables
- Metadata and SEO basics
- Image optimization basics
- Deployment-ready project structure

Practical Activities

- Next.js website
- Dynamic route project
- API-integrated Next.js app
- SEO-ready landing page

Module 7: Backend Development with Node.js and Express.js

This module helps learners build REST APIs and backend services for full-stack applications.

Topics Covered

- Backend fundamentals
- Node.js introduction
- npm and package management
- Express.js server setup
- Routes and controllers
- Middleware
- Request and response handling
- REST API principles
- CRUD APIs
- Error handling
- Input validation
- Authentication basics
- JWT/session concepts
- Role-based access basics

- File upload basics
- API testing with Postman

Practical Activities

- REST API project
- CRUD backend assignment
- Authentication API
- Postman API testing collection

Module 8: Database Integration

This module teaches learners how web applications store, retrieve, and manage data.

Topics Covered

- Database fundamentals
- SQL vs NoSQL
- MongoDB basics
- Collections and documents
- CRUD operations
- PostgreSQL basics
- Tables and relationships
- Supabase/Firebase basics
- Connecting backend with database
- Data validation
- Querying data
- Relationship handling basics
- Secure storage practices
- Environment variables

Practical Activities

- Database-connected API
- Student/course database project
- User authentication database
- Backend with CRUD operations

Module 9: AI Tools for Full Stack Developers

This module helps learners use AI responsibly for faster coding, debugging, UI generation, and feature development.

Topics Covered

- AI-assisted coding workflow
- ChatGPT for debugging
- Cursor for project building
- GitHub Copilot-style coding workflows
- v0 for UI generation
- Prompting AI for frontend components
- Prompting AI for backend logic
- AI-assisted API documentation
- AI-assisted error fixing
- OpenAI API basics
- Chatbot integration
- AI content generation module
- Responsible use of AI-generated code
- Code review and manual validation

Practical Activities

- AI-generated component refinement
- Debugging with AI
- AI chatbot integration
- AI-assisted feature development

Module 10: Deployment and Capstone Project

This module focuses on shipping a complete project and presenting it as portfolio work.

Topics Covered

- GitHub deployment workflow
- Vercel deployment
- Render deployment basics
- Environment variables in deployment
- Production testing
- Bug fixing
- Project documentation
- Final portfolio presentation

Practical Activities

- Course enrollment platform
- Learning management system mini-project
- CRM lead management dashboard
- E-commerce web application
- AI-powered resume analyzer
- Student support chatbot
- Job application tracker

ASSESSMENTS THROUGHOUT THE PROGRAM

Coding Assignments	Frontend Mini-Project	Backend API Task	Database Task	AI Integration Task	Final Capstone
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CAPSTONE PROJECT EXAMPLES

LMS Mini-Project Build a learning portal with users and course content.	CRM Dashboard Create lead tracking and status management screens.	E-commerce Application Build product, cart, checkout, and admin flows.	AI Chatbot Integrate an AI support/chat module.	Job Tracker Track applications, profiles, and status updates.
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Certificate Eligibility


- Minimum 90% live-class attendance expected
- Minimum 80% assignment/project completion expected
- No pending course fee dues
- Compliance with LMS usage rules and program policies
- Final capstone/project submission and review, wherever applicable

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RECOGNITION, CERTIFICATE & ECOSYSTEM

The following page can be used as a credibility page in the candidate-facing brochure. It includes the sample certificate format, the startup recognition article, and the partner ecosystem references shared for Careerpedia.

<p style="text-align: center;">Certificate Preview</p> 	<p style="text-align: center;">News Article / Recognition</p> <h3>Hyd edtechs dominate list</h3> <p>Start-ups helps in transforming Hyderabad's innovation landscape</p> <p>7 HYD START-UPS IN TOP 10 LIST</p> <ul style="list-style-type: none"> RECYKAL.COM: Higher education KEUS SMART HOME: Appliances, electrical and electronics manufacturing GOKHANA: Hospitality COSSHOOOL: Higher education Hyderabad E-learning providers BHANU: Higher education <p><i>Courtesy: LinkedIn</i></p>
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OUR PARTNERS & ECOSYSTEM

				
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Final Program Notes

- The course duration is 4 months of online live training.
- LMS access may be provided for up to 1 year for recordings, assignments, notices, and selected learning resources.
- Certificates are issued subject to attendance, assignment/project completion, fee clearance, and compliance with program rules.
- Careerpedia is an edtech and upskilling platform. It does not guarantee placement, employment, internship, interview calls, or salary outcome.