

Full Stack Development

Build and deploy a complete full-stack web application from scratch.

Course Modules

1. Web & Programming Fundamentals (Week 1)

Key Topics:

- What is web development (frontend vs backend vs full-stack)
- How the internet works (Client–Server, HTTP/HTTPS)
- Tools overview: VS Code, Browser, GitHub
- HTML structure and common tags (headings, paragraphs, links, images)
- Lists, tables, forms (input, label, button)
- CSS syntax (inline, internal, external)
- Colors, fonts, units, box model
- CSS layouts: display, position, Flexbox
- Intro to responsive design

2. Advanced CSS & JavaScript Basics (Week 2)

Key Topics:

- Responsive design and media queries
- Mobile-first design and CSS best practices
- JavaScript introduction (variables, data types, operators)
- Console and debugging
- Control flow (if/else, for loops, while loops)
- Functions
- DOM manipulation and querySelector
- Events (click, input) and simple interactive apps

3. JavaScript Deep Dive (Week 3)

Key Topics:

- Arrays and array methods
- Objects and nested data
- ES6 features: let/const, arrow functions

- Destructuring and spread operator
- Asynchronous JavaScript: callbacks, Promises
- async / await
- JavaScript mini project (form validation, To-Do app, or Calculator)

4. React Fundamentals (Week 4)

Key Topics:

- Why React and SPA concept
- Create React App / Vite setup
- JSX basics
- Functional components and props
- Reusable components
- State management with useState
- Handling events
- Controlled components
- First small React UI project

5. Advanced React (Week 5)

Key Topics:

- useEffect and component lifecycle
- Side effects and API calling
- Routing with React Router
- Multiple-page navigation
- Form handling and validation
- Complete frontend project (Part 2)

6. Backend with Node.js & Express (Week 6)

Key Topics:

- What is backend development
- Node.js overview
- npm and package.json
- Express.js setup
- Routes and middleware
- REST APIs (GET, POST, PUT, DELETE)
- Postman usage
- Backend mini project (simple REST API)

7. Database & Authentication (Week 7)

Key Topics:

- MongoDB basics and NoSQL concepts
- MongoDB Atlas setup
- Collections and documents
- Mongoose schema and models
- CRUD operations
- JWT authentication
- Login and signup APIs
- Full-stack integration (React + Backend)

8. Advanced Topics & Deployment (Week 8)

Key Topics:

- Authorization and security (protected routes)
- Roles (admin/user)
- File uploads and image handling
- Environment variables (dotenv)
- Frontend deployment (Netlify / Vercel)
- Backend deployment (Render / Railway)
- Final Capstone: Full-stack MERN project
- Code review and career guidance