



TECHNOCATION FREELANCING TRAINING INSTITUTE & SOFTWARE HOUSE

Professional Web Development Course Outline

Module 1: Introduction to Web Development

- Overview of Web Development: Front-end, Back-end & Full-stack
- How the Web Works (HTTP, DNS, Hosting, Domains)
- Understanding Web Technologies (HTML, CSS, JavaScript, Frameworks)
- Setting Up a Development Environment (VS Code, Git, Browser DevTools)

Module 2: HTML – Structure of the Web

- HTML Basics & Semantic Elements
- Forms & Input Elements
- Multimedia (Images, Audio, Video)
- Accessibility & SEO Best Practices

Module 3: CSS – Styling the Web

- CSS Basics: Selectors, Properties, and Values
- Box Model, Flexbox & Grid Layout
- Responsive Web Design (Media Queries, Mobile-First Approach)
- CSS Preprocessors (SASS, LESS)

Module 4: JavaScript – Making Websites Interactive

- JavaScript Basics (Variables, Functions, Loops, Events)
- DOM Manipulation & Event Handling
- ES6+ Features (Arrow Functions, Destructuring, Modules)
- Fetch API & JSON Handling

Module 5: Front-End Frameworks & Libraries

- Introduction to Bootstrap & Tailwind CSS
- JavaScript Frameworks: React.js, Vue.js, or Angular.js
- State Management (Redux, Vuex, Context API)
- Component-Based Development & Hooks

Module 6: Version Control & Deployment

- Introduction to Git & GitHub (Repositories, Branching, Merging)
- CI/CD Basics (GitHub Actions, Netlify, Vercel)
- Hosting & Deployment (cPanel, Firebase, AWS, DigitalOcean)
- Domain Configuration & SSL Certificates

Module 7: Back-End Development with Node.js & Express.js

- Setting Up a Node.js Server
- RESTful API Development with Express.js
- Middleware & Routing
- Handling HTTP Requests & Responses

Module 8: Databases & Server-Side Data Handling

- Relational Databases (MySQL, PostgreSQL) vs. NoSQL (MongoDB, Firebase)
- CRUD Operations & SQL Queries
- ORM (Mongoose, Sequelize, Prisma)
- Authentication & Authorization (JWT, OAuth)

Module 9: Full-Stack Web Development

- Connecting Front-End with Back-End (APIs & AJAX)
- Authentication Systems (User Login, Registration)
- Role-Based Access Control (RBAC)
- Building a Full-Stack Web Application (MERN or MEVN Stack)

Module 10: Advanced Web Development Topics

- WebSockets & Real-Time Communication (Socket.io)
- Progressive Web Apps (PWAs) & Service Workers
- Web Performance Optimization (Lazy Loading, Caching)
- Introduction to Headless CMS & Serverless Architecture

Module 11: Security & Best Practices

- Web Security Fundamentals (XSS, CSRF, SQL Injection Prevention)
- Secure Authentication & Password Hashing
- HTTPS & SSL/TLS Encryption
- Performance & Scalability Best Practices

Module 12: Final Project & Certification Preparation

- Developing a Full-Stack Web Application (E-commerce, Blog, Dashboard)
- Testing & Debugging Web Applications
- Preparing for Web Development Certifications
- Career Guidance & Portfolio Building