

Diploma in Web Technologies (6 Months)

Duration: 6 Months (~240 Hours)

Mode: Live Online / Classroom

Role after completion: UI Developer / Frontend Developer / Full Stack Developer

Certifications prepared: FreeCodeCamp Responsive Web Design, W3C HTML5 & CSS3, Angular Developer, Meta React Developer, MongoDB University (M001/M220), Full Stack Developer (academy/vendor)

Tools & Technologies: HTML, CSS, JavaScript, React, Angular, MongoDB, Express.js, Node.js, Bootstrap, Tailwind CSS, Material UI, Git & GitHub, Docker (intro), Netlify/Vercel/Render

Detailed Syllabus

Months 1–2: Frontend Foundations

Week 1: Web & HTML5 Basics

- Web fundamentals: client–server, HTTP/HTTPS, DNS
- HTML5 document: structure, semantics, forms, multimedia
- Accessibility & ARIA basics
- Assignment

Week 2: CSS Fundamentals

- Selectors, pseudo-classes, box model
- Flexbox & Grid layouts
- Responsive design & media queries
- Assignment

Week 3: Frameworks & Utilities

- Bootstrap grid & components
- Tailwind CSS utility-first workflow
- Theming, dark/light modes
- Assignment

Week 4: Angular Foundations

- Angular CLI setup, project structure
- Components, templates, data binding
- Directives, pipes, services, DI basics
- Assignment
- Mock Interview 1

Week 5: Angular Advanced

- Routing, guards, resolvers
- Forms (template-driven vs reactive)
- HttpClient & RxJS basics
- Assignment

Week 6: React Foundations

- Project setup (CRA/Vite)
- JSX, props, state, events
- useState, useEffect basics
- Assignment

Week 7: React Advanced

- Routing with React Router v6
- Controlled forms, API integration
- State management with Context API
- Assignment

Week 8: React Libraries & Deployments

- Redux Toolkit (slices, thunks)
- Material UI / Ant Design integration
- Deployment to Netlify/Vercel
- Assignment
- Mock Interview 2

Months 3–4: Backend & Full Stack

Week 9: Node.js & Express.js Basics

- Node.js runtime, npm/yarn scripts
- Express routing, middleware
- MongoDB setup with Mongoose
- Assignment

Week 10: RESTful APIs

- CRUD endpoints, validation, error handling
- Postman testing
- Pagination, filtering, sorting
- Assignment

Week 11: MERN Stack Integration

- React frontend with Express backend
- Authentication (JWT, RBAC)
- File handling (Multer, GridFS/S3)

- Assignment

Week 12: MEAN Stack Integration

- Angular frontend with Node.js backend
- Angular Material integration
- Authentication & guards
- Assignment
- Mock Interview 3

Week 13: Advanced Data Modeling

- MongoDB relationships, indexes, aggregation pipelines
- Optimization & performance tuning
- Assignment

Week 14: Deployment & Security

- Docker basics & environment configs
- CI/CD workflows (GitHub Actions overview)
- Cloud deployment (AWS/Render/Heroku)
- Assignment

Week 15: Testing & Monitoring

- Jest/Supertest for backend tests
- Angular/React component testing
- Logging & monitoring (Winston, error handling)
- Assignment

Week 16: Full Stack Projects

- End-to-end integration MERN/MEAN
- Admin dashboards & role-based apps
- Assignment
- Mock Interview 4

Months 5–6: UI Full Stack & Advanced Topics

Week 17: UI Full Stack Essentials

- Combining React & Angular frontends
- API integration with Express
- Database persistence (MongoDB & MySQL basics)
- Assignment

Week 18: Authentication & Security

- JWT, sessions, OAuth basics

- CSRF & XSS prevention
- Secure API design
- Assignment

Week 19: DevOps Foundations

- Git branching strategies
- Docker for development/test
- CI/CD overview
- Assignment

Week 20: Cloud & Integrations

- Deployment on Netlify/Vercel & Render
- Third-party APIs (Stripe, SendGrid, Google Maps)
- Assignment
- Mock Interview 5

Week 21: Performance & Scalability

- Performance tuning (frontend + backend)
- Caching strategies & CDN basics
- Lazy loading & code splitting
- Assignment

Week 22: Advanced Testing

- Jest & React Testing Library for React
- Angular unit tests (Jasmine/Karma)
- Integration testing patterns
- Assignment

Week 23: Capstone Project Work

- Full-stack project guidance (E-commerce / Job Portal / Social Media app)
- Code reviews & performance tuning
- Assignment

Week 24: Final Evaluation & Interview Prep

- Mock Interview 6 (final)
- Resume & portfolio building session
- Project presentations
- Career readiness evaluation

Capstone Projects

- Full E-commerce Web Application (Frontend + Backend + Database + Deployment)

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- Multi-user Admin Dashboard with Analytics
 - Job Portal or Social Media Mini-App (role-based authentication)