

# FULLSTACK DEVELOPMENT SYLLABUS

## Module 1: Introduction to Web Development

- What is Full Stack Development
- Client-server architecture
- Frontend vs Backend vs Database
- Tools and technologies overview
- Setting up development environment

## Module 2: HTML (Structure)

- HTML5 basics
- Tags, elements, attributes
- Forms, tables, media
- Semantic HTML
- SEO basics in HTML

## Module 3: CSS (Design & Layout)

- CSS3 fundamentals
- Box model
- Flexbox
- Grid system
- Responsive design (media queries)
- Animations and transitions

## Module 4: JavaScript (Core Programming)

- Variables, data types
- Functions and events
- DOM manipulation
- ES6+ features

- Asynchronous JavaScript (Promises, async/await)

## Module 5: Version Control

- Introduction to Git
- Git commands (clone, commit, push, pull)
- GitHub basics
- Collaboration workflow

## Module 6: Frontend Framework

- Introduction to React.js
- Components and JSX
- Props and State
- React Hooks
- Routing (React Router)
- API integration

## Module 7: UI Frameworks

- Bootstrap basics
- Tailwind CSS
- Creating reusable UI components
- Responsive UI design

## Module 8: Backend Development

- Introduction to backend
- Node.js basics
- Express.js framework
- Routing and middleware
- Building REST APIs

## Module 9: Database Management

- Introduction to databases
- SQL (MySQL basics)
- NoSQL (MongoDB basics)
- CRUD operations
- Database design

## Module 10: Authentication & Authorization

- User registration and login
- JWT authentication
- Password hashing
- Role-based access

## Module 11: API Integration

- REST API concepts
- Fetch/Axios
- Handling JSON data
- Third-party APIs

## Module 12: State Management

- Context API
- Redux basics
- Managing global state

## Module 13: File Upload & Media Handling

- Uploading files/images
- Storage handling
- Validation

## Module 14: Testing & Debugging

- Debugging techniques
- Console tools
- Testing basics

## Module 15: Performance Optimization

- Code optimization
- Lazy loading
- Caching
- Best practices

## Module 16: Deployment

- Hosting frontend (Netlify/Vercel)
- Hosting backend (Node server)
- Domain & hosting setup
- Environment variables
- CI/CD basics

## Module 17: Security Best Practices

- Preventing XSS & CSRF
- Secure APIs
- Data protection

## Module 18: Real-World Projects

- Portfolio Website
- Blog Application (Full Stack)
- E-commerce Website
- Admin Dashboard