

Website Development (12 months)

Syllabus: -

Part-1(Front-end for 6 months)

I. Foundations & Visual Design: -

Web Basics: Intro to Internet, WWW, Static vs. Dynamic sites, Web Standards.

Design Principles: Color Theory, Typography, Layout, Composition, User Experience (UX).

Tools: Wireframing & Mockups (Figma, Canva).

II. Core Languages (The Building Blocks):-

HTML5: Structure, tags (headings, links, images, forms), semantic elements.

CSS3: Selectors, Box Model, Layout (Flexbox, Grid), Responsive Design (Media Queries).

JavaScript (Intro): Variables, Data Types, Functions, Events for interactivity.

III. Advanced Topics & Deployment:-

Responsive Design: Mobile-first, fluid layouts.

Design Tools: Dreamweaver, Adobe XD (optional).

Hosting: Domain names, Web Hosting, DNS.

Version Control: Git/GitHub.

Part-2(Backend for 6 months)

Month 1: Programming Fundamentals

Goal: Build strong logic & coding basics

- Introduction to Back-End Development
- How the Web Works (Client-Server, HTTP/HTTPS)
- Programming Basics (choose **Python / Java / Node.js**)
- Variables, Data Types, Operators
- Conditional Statements (if, else, switch)
- Loops (for, while)
- Functions & Modular Programming

- Basic Debugging & Error Handling
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◇ Month 2: Advanced Programming & OOP

Goal: Write clean, structured, reusable code

- Object-Oriented Programming (OOP) Concepts
 - Class & Object
 - Inheritance
 - Polymorphism
 - Encapsulation
 - File Handling (Read/Write files)
 - Exception Handling
 - Introduction to Version Control (Git & GitHub)
 - Coding Best Practices
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◇ Month 3: Databases & SQL

Goal: Store, retrieve, and manage data efficiently

- Database Concepts (DBMS vs RDBMS)
 - SQL Basics
 - Create, Insert, Update, Delete
 - Select Queries
 - Constraints, Keys (Primary, Foreign)
 - Joins (Inner, Left, Right)
 - Subqueries
 - Indexes & Views
 - Introduction to NoSQL (MongoDB – basics)
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◇ Month 4: Server-Side Frameworks

Goal: Build real back-end applications

- Backend Framework (Choose one):
 - **Django / Flask** (Python)
 - **Spring Boot** (Java)
 - **Express.js** (Node.js)
- MVC Architecture
- Routing & Controllers
- Connecting Database with Backend
- CRUD Operations

- Middleware Concepts
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◇ Month 5: APIs, Authentication & Security

Goal: Make applications secure and scalable

- RESTful API Development
 - JSON & API Testing (Postman)
 - Authentication & Authorization
 - Sessions & Cookies
 - JWT (JSON Web Token)
 - Password Encryption (Hashing)
 - Role-Based Access Control
 - Basic Security Concepts
 - SQL Injection
 - XSS & CSRF
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◇ Month 6: Deployment, Projects & Interview Prep

Goal: Become job-ready

- Hosting & Deployment
 - Cloud Basics (AWS / Render / Railway)
 - Server Setup
- Environment Variables
- Logging & Error Monitoring
- Performance Optimization
- **Final Live Project**
 - User Management System / Blog / E-Commerce Backend
- Resume Building (Backend Focused)
- Interview Questions & Mock Interviews
- Freelancing & Job Guidance