

Web Development Curriculum (HTML, CSS, JavaScript, ES6)

Module 1: HTML - Structure of the Web

1.1 Basics of HTML

- What is HTML?
- HTML Boilerplate
- Tags, Elements, Attributes

1.2 HTML Text Formatting

- Headings, Paragraphs, Line breaks
- Bold, Italic, Underline, Superscript & Subscript
- Lists: Ordered, Unordered, Description

1.3 HTML Links & Images

- Anchor <a> tag - internal, external, email, telephone
- Image tag - attributes (src, alt, width, height)

1.4 HTML Tables and Forms

- Table rows, columns, rowspan, colspan
- Forms: <form>, input types, labels, textarea, button
- Form validation attributes

1.5 Semantic HTML & Media

- Semantic Tags: <header>, <nav>, <main>, <article>, <footer>
- Audio, Video Embedding
- Meta tags & SEO basics

Module 2: CSS - Styling the Web

2.1 CSS Basics

- Inline, Internal, External CSS
- CSS Syntax & Selectors (class, id, element, group)

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2.2 Colors, Fonts, and Text Styling

- Color formats: Name, HEX, RGB, HSL
- Font-family, size, weight
- Text-align, text-transform, text-shadow

2.3 Box Model & Layout

- Margin, Padding, Border
- Width, Height, Max-width
- Display: block, inline, inline-block

2.4 Positioning & Z-Index

- Static, Relative, Absolute, Fixed, Sticky
- Overflow, Float & Clear

2.5 Flexbox & Grid

- Flex container & items
- Grid layout - rows, columns
- Alignment, spacing, responsiveness

2.6 Responsive Design

- Media Queries
- Mobile-first approach
- Units: px, em, rem, %, vw, vh

Module 3: JavaScript - Programming the Web

3.1 Introduction to JavaScript

- What is JavaScript?
- Where to place JavaScript in HTML
- Console, Comments, alert, prompt, confirm

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3.2 Variables and Data Types

- var, let, const
- Primitive types: Number, String, Boolean, Null, Undefined
- typeof operator

3.3 Operators & Expressions

- Arithmetic, Comparison, Logical, Assignment
- String concatenation and template literals

3.4 Control Statements

- if, else, else if, switch
- Loops: for, while, do-while
- Break and Continue

3.5 Functions

- Function Declaration, Parameters, Return
- Function Expressions, Arrow Functions (ES6)
- Scope: Global vs Local

3.6 Arrays and Objects

- Creating arrays, accessing values, array methods (push, pop, shift, map, filter)
- Creating objects, accessing properties
- Nested objects and arrays

3.7 DOM Manipulation

- getElementById, querySelector, innerHTML, style, classList
- Event Listeners: click, mouseover, submit
- Creating and removing elements

3.8 Form Validation

- Accessing form data

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- Prevent default submission
- Error messages and success messages

Module 4: ES6 - Modern JavaScript Features

4.1 Let, Const, and Block Scope

- Difference from var

4.2 Arrow Functions

- Syntax and use cases

4.3 Template Literals

- Multi-line strings and embedded expressions

4.4 Destructuring

- Arrays and objects

4.5 Spread and Rest Operators

- Copying arrays/objects
- Function parameters

4.6 Default Parameters

- Providing fallback values

4.7 Modules (Intro)

- import, export

4.8 Promises (Intro)

- then, catch, finally

Projects & Practice Ideas

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- Personal Portfolio Website
- Responsive Landing Page
- Simple Calculator (JS)
- To-Do List App
- Form with Validation
- Image Gallery with Filter