



BCH WEB DEVELOPMENT ACADEMY

FRONT-END WEB DEVELOPMENT CURRICULUM

Week 1: HTML & Web Foundations

◆ Session 1: Introduction to HTML Structure, Tags, Forms & Inputs

- **Core Topics:** HTML elements, structure (<html>, <head>, <body>), basic tags (<h1>, <p>, <a>), form elements (<input>, <button>, <select>)
- **Learning Objectives:** Understand basic HTML syntax and form construction
- **Activity Notes:** Live demo building a contact form

◆ Session 2: Media, Semantics & Accessibility

- **Core Topics:** Semantic tags (<article>, <section>, <nav>), adding images and videos, alt text, basic ARIA roles
- **Learning Objectives:** Structure HTML using semantic tags and build accessible web pages
- **Activity Notes:** Embed a YouTube video and create accessible image captions

◆ Session 3: Developer Tools & Page Structure

- **Core Topics:** Chrome DevTools, file/folder structure, using VS Code, HTML validator tools
- **Learning Objectives:** Navigate DevTools, debug HTML issues, set up local projects
- **Activity Notes:** Guided tool walkthrough + folder setup exercise

Week 2: CSS Fundamentals + Layouts

◆ Session 4: CSS Basics, Selectors, Box Model

- **Core Topics:** CSS syntax, selectors, color, font, margins/padding, the box model
- **Learning Objectives:** Style basic HTML elements and understand page flow
- **Activity Notes:** Style a sample profile card

◆ Session 5: Flexbox & Positioning

- **Core Topics:** display: flex, justify-content, align-items, position: relative/absolute
- **Learning Objectives:** Create flexible layouts using Flexbox
- **Activity Notes:** Build a navbar layout with Flexbox

◆ Session 6: Grid + Responsive Layout

- **Core Topics:** CSS Grid basics, media queries, layout breakpoints
- **Learning Objectives:** Build responsive grid layouts for multiple screen sizes
- **Activity Notes:** Create a simple responsive gallery

Week 3: Advanced CSS + UI Libraries

◆ Session 7: CSS Transitions & Animations

- **Core Topics:** transition, transform, keyframe animations
- **Learning Objectives:** Add smooth visual effects and motion to web elements
- **Activity Notes:** Animate buttons and cards on hover

◆ Session 8: Responsive Design Deep Dive

- **Core Topics:** Mobile-first approach, layout shifting, accessibility considerations
- **Learning Objectives:** Build fully responsive pages for mobile and desktop
- **Activity Notes:** Redesign a landing page to be mobile-first

◆ Session 9: Intro to Tailwind CSS / Material UI

- **Core Topics:** Utility-first CSS with Tailwind, component libraries
- **Learning Objectives:** Style UI efficiently using libraries
- **Activity Notes:** Build a sample card UI with Tailwind or MUI

Week 4: JavaScript Essentials

◆ Session 10: Variables, Data Types, Functions

- **Core Topics:** let, const, strings, numbers, arrays, functions
- **Learning Objectives:** Understand the foundations of JavaScript
- **Activity Notes:** Write and run basic JS functions in browser console

◆ Session 11: DOM Manipulation & Events

- **Core Topics:** document.querySelector, event listeners, manipulating HTML/CSS via JS
- **Learning Objectives:** Dynamically update a webpage with JS
- **Activity Notes:** Build a light/dark mode toggle

◆ Session 12: Control Structures + Mini Exercises

- **Core Topics:** if/else, for, while, logic in JS
- **Learning Objectives:** Apply logic to solve basic problems
- **Activity Notes:** Mini code challenges (e.g., even/odd checker)

Week 5: JavaScript Intermediate + Mini Project

◆ Session 13: Form Validation & Storage

- **Core Topics:** Input validation, localStorage, sessionStorage
- **Learning Objectives:** Create interactive forms with basic data persistence
- **Activity Notes:** Build a feedback form with validation

◆ Session 14: API Fetching (GET & POST)

- **Core Topics:** fetch, JSON, HTTP methods, error handling
- **Learning Objectives:** Get and send data to an external API
- **Activity Notes:** Fetch and display data from a public API

◆ Session 15: Mini Project – Weather or Movie App

- **Core Topics:** Integrating previous skills
- **Learning Objectives:** Build a functional mini app using HTML, CSS, and JS
- **Activity Notes:** Project work time + demo presentation

Week 6: React Basics + Hooks

◆ Session 16: React Setup, JSX, Components & Props

- **Core Topics:** Create React App, JSX syntax, functional components, props
- **Learning Objectives:** Build and reuse React components
- **Activity Notes:** Setup a basic React app with a greeting card component

◆ Session 17: State, Events & useState

- **Core Topics:** useState, event handling, controlled inputs
- **Learning Objectives:** Manage dynamic data in components
- **Activity Notes:** Build a counter and a dynamic input display

◆ Session 18: useEffect + Lifecycle Basics

- **Core Topics:** useEffect, mounting/unmounting, side effects
- **Learning Objectives:** Load and update data with lifecycle control
- **Activity Notes:** Fetch and display API data in a React component

Week 7: React Forms + Routing + External Data

◆ Session 19: Controlled Forms + Validation

- **Core Topics:** Form inputs, validation logic, error handling in React
- **Learning Objectives:** Build forms with real-time validation
- **Activity Notes:** Create a sign-up form with validation

◆ Session 20: React Router Basics

- **Core Topics:** react-router-dom, Routes, Link, nested routing
- **Learning Objectives:** Navigate between views in a React app
- **Activity Notes:** Build a multi-page site with navigation

◆ Session 21: Fetching API in React (useEffect + fetch/axios)

- **Core Topics:** Async API calls, axios, loading states
- **Learning Objectives:** Load dynamic data in React views
- **Activity Notes:** Display API content with loading/error states

Week 8: Final Project Week

◆ Session 22: Project Planning

- **Core Topics:** Feature scoping, wireframes, component breakdown
- **Learning Objectives:** Plan a React project from scratch
- **Activity Notes:** Draft a roadmap and design for the final project

◆ Session 23: Project Build

- **Core Topics:** Team/solo project development
- **Learning Objectives:** Build a complete, functional React application
- **Activity Notes:** Active coding session

◆ Session 24: Project Finalization + Presentation

- **Core Topics:** Project polish, deployment options, peer review
- **Learning Objectives:** Present a finished frontend app with key features
- **Activity Notes:** Final project demos and feedback