JavaScript Full Course Syllabus

This document provides a day-wise breakdown of a full JavaScript syllabus for teaching. The syllabus is divided into three sections: Basic, Intermediate, and Advanced concepts. Each day covers key concepts and topics to provide a comprehensive learning path.

# 1. Basic JavaScript Concepts

## Day 1: Introduction to JavaScript

* What is JavaScript?
* History of JavaScript
* Introduction to the browser and the Developer Tools
* Writing the first JavaScript program
* Syntax, comments, and indentation

## Day 2: Variables and Data Types

* Declaring variables (let, const, var)
* Data types (String, Number, Boolean, Undefined, Null)
* Type conversion and coercion
* Template literals

## Day 3: Operators

* Arithmetic Operators
* Assignment Operators
* Comparison Operators
* Logical Operators
* Ternary Operator

## Day 4: Conditional Statements

* If, else if, and else
* Switch case statement
* Logical Operators with conditions

## Day 5: Loops

* For Loop
* While Loop
* Do-while Loop
* For-in and For-of Loops

## Day 6: Functions

* Function Declaration
* Function Expression
* Arrow Functions
* Parameters and Return Values

## Day 7: Arrays

* Creating and initializing arrays
* Accessing array elements
* Array methods (push, pop, shift, unshift)
* Iterating through arrays (for, forEach)

# 2. Intermediate JavaScript Concepts

## Day 8: Objects

* Defining and using objects
* Accessing object properties (dot notation, bracket notation)
* Object methods and this keyword
* Iterating over object properties

## Day 9: DOM Manipulation

* Understanding the Document Object Model (DOM)
* Selecting elements (getElementById, querySelector, etc.)
* Manipulating text, style, and attributes
* Event handling (click, hover, etc.)

## Day 10: Event Handling

* Event listeners
* Event propagation (bubbling and capturing)
* Event delegation
* Preventing default actions

## Day 11: Arrays - Advanced

* Higher-order functions (map, filter, reduce)
* Spreading and destructuring arrays
* Array methods (sort, slice, concat)
* Working with multidimensional arrays

## Day 12: Error Handling

* Try, catch, finally
* Throwing custom errors
* Handling asynchronous errors

## Day 13: Scope and Closures

* Global vs Local Scope
* Function Scope
* Lexical scoping
* Closures in JavaScript

## Day 14: Asynchronous JavaScript

* Introduction to Asynchronous JavaScript
* Callbacks
* Promises and chaining
* Async/Await

# 3. Advanced JavaScript Concepts

## Day 15: ES6 and Modern JavaScript

* Let and const
* Template Literals
* Arrow Functions
* Destructuring and Rest/Spread Operator
* Classes and Modules

## Day 16: JavaScript Design Patterns

* Singleton Pattern
* Module Pattern
* Observer Pattern
* Factory Pattern

## Day 17: Advanced Functions

* IIFE (Immediately Invoked Function Expressions)
* Function currying
* Function composition
* Bind, call, and apply

## Day 18: The JavaScript Event Loop

* Understanding the Event Loop
* Call Stack, Callback Queue, and Web APIs
* Microtasks vs Macrotasks
* How JavaScript handles async code

## Day 19: Web APIs and Fetch API

* Introduction to Web APIs
* Using Fetch for HTTP requests
* Promises with Fetch API
* Handling responses and errors

## Day 20: JavaScript Frameworks Overview

* Introduction to React, Vue, and Angular
* Understanding the concept of Virtual DOM
* Setting up a simple JavaScript framework app

## Day 21: JavaScript and TypeScript

* Understanding TypeScript
* Basic TypeScript concepts (types, interfaces)
* Writing and compiling TypeScript to JavaScript