

JavaScript Course – Complete Syllabus

1. Introduction to JavaScript

- What is JavaScript?
 - How JS works (Execution Engine & Call Stack)
 - Setting up environment (Browser + VS Code)
 - Linking JS to HTML
 - `console.log()` and debugging basics
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2. JavaScript Basics

- Variables (`var`, `let`, `const`)
 - Data Types (string, number, boolean, null, undefined, object, symbol, bigint)
 - Operators (Arithmetic, Assignment, Comparison, Logical)
 - Comments
 - Type Conversion
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3. Control Flow

- `if`, `else`, `else if`
 - `switch`
 - `for`, `while`, `do...while`
 - `break` and `continue`
 - Ternary Operator
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4. Functions

- Function declaration
- Function expression
- Arrow functions
- Default parameters

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- Returning values
 - Callbacks
 - Higher-order functions
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5. Arrays

- Creating arrays
 - Array methods:
 - push, pop, shift, unshift
 - map, filter, reduce
 - slice, splice
 - find, some, every
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6. Objects

- Object creation
 - Adding & removing properties
 - Nested objects
 - Object methods
 - this keyword
 - Destructuring
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7. DOM Manipulation

- What is DOM?
- Selecting elements (getElementById, querySelector)
- Changing HTML content
- Changing CSS using JS
- Creating and removing elements

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- Event handling:
 - click, mouseover, keyup, etc.
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8. BOM (Browser Object Model)

- Window object
 - Timers (setTimeout, setInterval)
 - Location object
 - History object
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9. ES6+ (Modern JavaScript)

- let & const
 - Template literals
 - Spread & Rest operator
 - Destructuring
 - Arrow functions
 - Classes
 - Modules (import/export)
 - Promises
 - Async/Await
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10. Error Handling

- try, catch, finally
 - Custom errors
 - Debugging advanced
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11. Working with APIs

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- Fetch API
 - JSON basics
 - Sending GET & POST requests
 - Text, JSON, FormData handling
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12. JavaScript in the Browser

- LocalStorage
 - SessionStorage
 - Cookies (basics)
 - Web storage APIs
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13. JavaScript OOP

- Classes and objects
 - Constructor
 - Inheritance
 - Static methods
 - Encapsulation basics
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14. Asynchronous JavaScript

- Callbacks
 - Promises
 - async / await
 - Event Loop
 - Microtasks vs Macrotasks
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15. Mini Projects

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Examples:

- Calculator
 - To-Do List App
 - Stopwatch
 - Digital Clock
 - Weather App (using API)
 - Notes App
 - Form Validation Project
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16. Final Projects

Examples:

- Full Frontend Website
- Portfolio Website (interactive)
- Movie Search App (API)
- E-commerce Frontend
- Chat Application (Frontend logic)