

Fundamentals of JavaScript Course

Course Duration: 24 Hours

Course Code : JS101

1. Course Overview

The **Fundamentals of JavaScript Course** is designed to provide learners with a solid foundation in JavaScript, the most widely used programming language for web development. This course introduces the basics of JavaScript programming, including syntax, control structures, functions, objects, and DOM manipulation. By the end of this course, participants will be able to build dynamic and interactive web applications using JavaScript.

2. What You'll Learn?

- Understand the role of JavaScript in web development.
- Master variables, operators, and data types.
- Work with control flow statements (if, else, switch, loops).
- Write and manage functions effectively.
- Understand arrays, objects, and JSON data.
- Manipulate the DOM (Document Object Model).
- Handle events and user interactions.
- Learn ES6+ features such as arrow functions, let/const, and template literals.
- Work with asynchronous programming (Promises, async/await).

- Debugging and best practices in JavaScript.

3. Target Audience

- Beginners in programming who want to start with JavaScript.
- Web developers looking to enhance their front-end development skills.
- Students and professionals aiming for careers in web and full-stack development.
- Anyone interested in building dynamic and interactive websites.

4. Pre-Requisites

- Basic understanding of **HTML** and **CSS**.
- No prior programming experience required (helpful but not mandatory).

5. Course Content

Module 1: Introduction to JavaScript

- History and role of JavaScript
- Setting up environment (Browser, VS Code)
- Writing your first JavaScript program

Module 2: JavaScript Basics

- Variables and constants (var, let, const)
- Data types and type conversion
- Operators and expressions

Module 3: Control Flow

- Conditional statements (if-else, switch)

- Loops (for, while, do-while, for...of, for...in)

Module 4: Functions in JavaScript

- Function declarations and expressions
- Arrow functions (ES6)
- Scope and closures

Module 5: Arrays and Objects

- Creating and manipulating arrays
- Iterating through arrays
- Working with objects and JSON

Module 6: DOM Manipulation

- Selecting and modifying elements
- Adding and removing elements dynamically
- Styling with JavaScript

Module 7: Events Handling

- Understanding events
- Event listeners
- Form validation using JavaScript

Module 8: Advanced JavaScript Concepts

- ES6 features (template literals, destructuring, spread/rest operators)
- Modules and imports/exports
- Asynchronous JavaScript (callbacks, Promises, async/await)

Module 9: Error Handling & Debugging

- Common errors in JavaScript
- Using try...catch
- Debugging with browser developer tools

Module 10: Mini Project

- Building a dynamic interactive website (e.g., To-Do App or Calculator).

