



TECHNOCATION FREELANCING TRAINING INSTITUTE & SOFTWARE HOUSE

Professional JavaScript Course Outline

Module 1: Introduction to JavaScript

- Overview of JavaScript & Its Role in Web Development
- Setting Up the Development Environment (VS Code, Chrome DevTools)
- Running JavaScript in Browsers & Node.js
- JavaScript vs. Other Programming Languages

Module 2: JavaScript Fundamentals

- Variables (var, let, const) & Data Types
- Operators & Expressions
- Conditional Statements (if-else, switch-case)
- Loops & Iterations (for, while, do-while)

Module 3: Functions & Scope in JavaScript

- Function Declaration & Function Expressions
- Arrow Functions & Higher-Order Functions
- Callback Functions & Closures
- Scope & Hoisting in JavaScript

Module 4: JavaScript Objects & Arrays

- Creating & Manipulating Objects
- Working with Arrays (map, filter, reduce)
- Object-Oriented Programming (OOP) Concepts in JavaScript
- Prototypes & Inheritance

Module 5: DOM Manipulation & Events

- Understanding the Document Object Model (DOM)
- Selecting & Modifying DOM Elements (querySelector, getElementById)
- Handling Events (click, keypress, mouse events)
- Event Delegation & Bubbling

Module 6: Asynchronous JavaScript

- Callbacks & the Callback Hell Problem
- Promises & Promise Chaining
- Async/Await for Handling Asynchronous Operations
- Fetch API & AJAX for Making HTTP Requests

Module 7: Error Handling & Debugging

- Try...Catch for Error Handling
- Throwing & Catching Custom Errors
- Using Console & Debugging Tools in Browsers
- Best Practices for Debugging JavaScript Code

Module 8: JavaScript ES6+ Features

- Let & Const vs. Var
- Template Literals & Destructuring
- Spread & Rest Operators
- Modules & Import/Export

Module 9: Working with APIs & JSON

- Understanding RESTful APIs & HTTP Methods
- Fetch API & Handling Responses
- Using JSON for Data Exchange
- Consuming External APIs in JavaScript

Module 10: JavaScript Frameworks & Libraries (Overview)

- Introduction to React.js, Angular, & Vue.js
- When to Use a Framework vs. Vanilla JavaScript
- Setting Up a React.js Project (Basic Overview)
- Working with Third-Party Libraries (Lodash, Moment.js)

Module 11: JavaScript & Web Storage

- Local Storage, Session Storage & Cookies

- Storing & Retrieving Data from Web Storage
- Working with IndexedDB for Large Data Storage
- Security Considerations for Web Storage

Module 12: JavaScript & Web Performance Optimization

- Optimizing JavaScript Execution Speed
- Lazy Loading & Code Splitting
- Debouncing & Throttling for Performance
- Minimizing DOM Manipulations

Module 13: JavaScript for Back-End Development (Node.js Basics)

- Introduction to Node.js & Its Architecture
- Setting Up a Simple Server with Express.js
- Working with File System (fs Module)
- Connecting to Databases with JavaScript (MongoDB, MySQL)

Module 14: Security Best Practices in JavaScript

- Preventing Cross-Site Scripting (XSS) & Cross-Site Request Forgery (CSRF)
- Handling User Input & Input Validation
- Using Secure Authentication Methods (JWT, OAuth)
- Best Practices for Writing Secure JavaScript Code

Module 15: Final Project & Certification Preparation

- Developing a Full-Stack JavaScript Application
- Building an Interactive Front-End Project
- Preparing for JavaScript Certifications (ECMAScript, Node.js)
- Career Paths & Job Opportunities in JavaScript Development