

JavaScript For Developers

Course Duration: 32 Hours

Course code: JSD

1. Course Overview

This course is designed for developers who want to master JavaScript and apply it effectively in modern application development. It goes beyond the basics and focuses on JavaScript as a programming language—covering ES6+ features, asynchronous programming, advanced DOM manipulation, event handling, and integration with APIs. You will also explore modular coding, error handling, and performance optimization. By the end, you'll have the knowledge to build robust, maintainable, and scalable applications with JavaScript.

2. What you'll learn?

By the end of this course, you will be able to:

- Understand JavaScript's core concepts and execution model.
- Apply ES6+ modern JavaScript features in real projects.
- Manipulate the DOM dynamically and handle browser events.
- Work with asynchronous JavaScript (callbacks, promises, async/await).
- Fetch and integrate REST APIs into applications.
- Use JavaScript modules for clean and maintainable code.
- Implement error handling and debugging techniques.
- Optimize JavaScript for performance and scalability.
- Build real-world projects using modern JavaScript.

3. Target Audience

- Beginner and intermediate developers who know basic programming concepts.
- Backend developers (Java, Python, .NET, etc.) wanting to expand into frontend or full-stack.

- Web designers/developers aiming to enhance interactivity with JavaScript.
- Students preparing for frontend and full-stack development roles.

4. Pre-Requisites

- Basic knowledge of HTML and CSS.
- Familiarity with general programming concepts (variables, loops, conditionals).

5. Course content

Module 1: Basic Scripting

- JavaScript Basics
- JavaScript or ECMAScript?
- Which Version of JavaScript am I Using?
- Shims, Shivs, and Polyfills
- Writing and Testing JavaScript
- Editors and the F12 Tools
- Key Parts of a Script

Lab Exercises

- Experiment with the F12 Developer Tools
- Update the time on the page using JavaScript
- Add JavaScript to respond to an event

Module 2: The Document Object Model (DOM)

- Understanding the DOM
- Accessing Objects from the DOM
- Responding to Events
- Adding Elements to the DOM

Lab Exercises

- Add an animation to the home page
- Move the JavaScript to an external file
- Add JavaScript to supply mouse-over tips to the menu tabs

Module 3: Introduction to jQuery

- What is jQuery?
- Downloading the jQuery Library
- Understanding jQuery Versions
- Linking to the Library
- Selecting Elements using jQuery
- Working with Data Returned by jQuery
- Setting CSS Properties
- Running Functions Against the jQuery Return Set

Lab Exercises

- Add the jQuery Library to the project
- Create new elements using jQuery

Module 4: Ajax and Web Services

- Introduction to Web Services
- HTTP Verbs
- Data Formats: XML and JSON
- Ajax Fundamentals
- RESTful Web Services
- OData Overview
- OData Queries
- OData Updates

Lab Exercises

- Explore a REST Web Service
- Load data from a Web Service

Module 5: Diving in Deeper (Advanced JavaScript)

- Is JavaScript Compiled?
- Data Types and Objects
- Extending Data Types
- Variables, Scopes, and Hoisting
- Functions
- The this Keyword
- Handling Errors
- Recursion

