

## Course 153 – Comprehensive JavaScript and jQuery Programming

Duration: 3 days

### You Will Learn How To

- Write and debug computer programs using JavaScript
  - Create interactive forms with client-side validation
  - Create JavaScript function libraries for increased code reuse and easier maintenance
  - Make use of the jQuery JavaScript library
- Use jQuery to perform AJAX calls

### Course Benefits

Modern websites consist of more than just HTML and CSS. JavaScript is considered to be the industry standard to create dynamic pages that enhance the user experience. This course consists of comprehensive lectures and hands-on exercises designed to help you create feature-rich web pages that make use of JavaScript. This web development course is also a good introduction for people wanting to get started with computer programming.

### Who Should Attend

This course is intended for people familiar with basic HTML and CSS, and would like to advance their web development skills by learning JavaScript.

If you are not familiar with these technologies, we recommend course 151 – Web Development using HTML5, CSS3 and Bootstrap.

Prior programming experience is not required.

### Course Content

#### Introduction to JavaScript

- Introduction
- Trying Out JavaScript
- Displaying Output
- Getting User Input
- Debugging JavaScript

#### Basic JavaScript Syntax

- Introduction
- Code Blocks, Comments, and Whitespaces
- Literals and Variables
- Data Types
- Type Conversion
- Arithmetic Operators
- Conditional and Logical Operators
- Operator Precedence

#### Control Flow Structures

- if statement
- switch statement
- while loop
- do-while loop
- for loop
- break and continue

#### Arrays and Strings

- Arrays
- Creating Arrays
- Looping through Arrays
- Getting the Number of Elements in an Array



- Common Array Methods
- Creating and Using Tables
- Getting an Array of HTML Elements
- Strings
- String Functions

### Functions

- Introduction to Functions
- Creating and Calling Functions
- Defining Function Parameters
- Returning a Value from a Function
- Understanding Local and Global Variable Scope
- Using External JavaScript Files

### Event Handling and Form Validation

- Event Handling
- Handling onclick Events
- Handling onchange Events
- Handling onmouseover and onmouseout Events
- Handling onkeydown and onkeyup Events
- Handling onfocus and onblur Events
- Handling onload Events
- Handling onsubmit Events and Form Validation

### Objects

- Introduction to Objects
- Defining a Class
- Instantiating Objects
- Accessing Object's Attributes
- Accessing Object's Methods
- Defining Objects in Different Ways
- Passing by Reference
- Copying Objects

### Essential JavaScript Objects

- Date Object
- Math and Numbers Objects
- Array.sort() and compare functions

### Document Object Model

- Using the Browser Object Model
- The Document Object Model
- Getting HTML elements using the DOM
- Navigating the DOM
- Manipulating the DOM

### jQuery

- Setting Up jQuery
- jQuery Selectors
- Handling Mouse Clicks and Other Events
- Modifying the HTML Page
- Hiding and Showing HTML Elements
- Animating Elements
- Callback Functions
- Traversing the DOM

### AJAX and JSON

- Introduction to AJAX
- Loading content using jQuery
- Retrieving and Sending Data through GET
- Retrieving and Sending Data through POST
- Introduction to JSON
- Parsing JSON

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