

# JAVASCRIPT PROGRAMMING

## DURATION:

4 Days

## COURSE DESCRIPTION:

Introduction to Modern JavaScript Development training class teaches attendees how to build rich client-side web applications using HTML, CSS, JavaScript, and some jQuery. Students develop real-world JavaScript applications and learn how to create object-oriented JavaScript applications, handle exceptions, and how to use regular expressions. Then attendees take their JavaScript skills to a more advanced level by working with events, images, timers, closures, callbacks, namespaces, and JSON. The course concludes with an introduction to jQuery.

## BENEFITS OF ATTENDANCE:

All students will learn to:

- Develop real-world JavaScript applications
- Use arrays, web storage, and JavaScript libraries
- Create object-oriented JavaScript applications
- Handle exceptions
- Use regular expressions
- Work with events, images, and timers as they build applications like slide shows
- Use closures, callbacks, namespaces, and the module pattern to secure their applications
- Use JSON to transmit and store data
- Understand how jQuery can make JavaScript code even more efficient

## PREREQUISITES:

Fundamentals of HTML5 and CSS3 training or equivalent experience. If attendees will not have thorough knowledge of HTML5 fundamentals, please let us know and we will precede this course with a one-day HTML5 primer. No prior

programming experience is assumed, though this course can be swiftly adapted for a programming-savvy audience.

## COURSE OUTLINE:

### **Introduction to JavaScript**

Pre-Assessment Questions.  
Introduction to Scripting  
Origins of JavaScript  
JavaScript Characteristics  
JavaScript and Common Programming Concepts  
Java and JavaScript  
Server-Side vs. Client-Side Applications  
Annotating Your Code with Comments  
Lesson 1 Review

### **Working with Variables and Data in JavaScript.**

Pre-Assessment Questions  
Using JavaScript to Communicate with the User  
Using Data More Than Once: Variables  
JavaScript Expressions  
Operators  
Inline Scripting, Simple User Events and the onLoad and onUnload Event Handlers  
Keywords and Reserved Words.  
Lesson 2 Review

### **Functions, Methods and Events in JavaScript**

Pre-Assessment Questions Functions  
Defining a Function  
Calling a Function  
User Events and JavaScript Event Handlers  
Methods as Functions  
Lesson 3 Review

### **Controlling Program Flow in JavaScript**

Pre-Assessment Questions  
Controlling Decisional Program Flow  
The if...else Statement  
The while Statement  
The do...while Statement  
The for Statement  
The break Statement  
The continue Statement.  
The switch Statement.

Lesson 4 Review.

### **The JavaScript Object Model.**

Pre-Assessment Questions

The JavaScript Object Model.

Commonly Used Objects

The window Object.

The document Object.

The with Statement.

The image Object

The history Object.

The location Object

The navigator Object.

Lesson 5 Review.

### **JavaScript Language Objects.**

Pre-Assessment Questions

Introduction to JavaScript Language Objects.

The String Object.

Additional String Object Methods.

Evaluating Strings

JavaScript Regular Expressions.

The Array Object

The Date Object.

Setting and Extracting Time Information.

The Math Object.

Lesson 6 Review.

### **Developing Interactive Forms with JavaScript**

Pre-Assessment Questions

Interactive Forms.

Overview of Form Elements.

Referring to a Form Element

The form Object

The button Object .

The checkbox Object

The text and textarea Objects

The radio Object .

The select Object.

Multiple-Selection Lists.

Form Validation.

Lesson 7 Review.

### **Cookies and JavaScript Security.**

Pre-Assessment Questions.

Security and Cookies in JavaScript.

What Are Cookies?  
How Are Cookies Sent?  
Who Can Send Cookies?  
Storing Cookies.  
Why Use Cookies?  
Assigning a Cookie  
Testing for Cookie Presence.  
Clearing a Cookie.  
Controlling Cookies in the Browser.  
JavaScript Security Issues  
Lesson 8 Review.

### **Controlling Frames with JavaScript.**

Pre-Assessment Questions  
Using JavaScript with Frames and Windows.  
Targeting Frames with JavaScript.  
Changing Two or More Frames with JavaScript.  
Frames, Functions and Variables.  
Targeting Windows with JavaScript.  
Windows, Functions and Variables

### **Custom JavaScript Objects.**

Pre-Assessment Questions.  
Creating Custom Objects  
Custom Object Demonstration  
Creating a JavaScript Object: The Constructor.  
Creating an Instance of a Custom Object  
Creating Object Methods  
Creating Functions for Your Objects.  
Complex Custom Objects.

### **Object Oriented Javascript**

Object  
Class  
Constructor  
Inheritance  
Polymorphism

## **ERROR HANDLING AND DEBUGGING**

### **Browser Error Reporting**

Internet Explorer  
Firefox  
Safari  
Opera  
Chrome

## **Error Handling**

The try-catch Statement

Throwing Errors

The error Event

Error-handling Strategies

Identify Where Errors Might Occur

Distinguishing between Fatal and Nonfatal Errors

Log Errors to the Server

## **Debugging Techniques**

Logging Messages to a Console

Logging Messages to the Page

Throwing Errors

## **INTRODUCTION OF Advance JavaScript**

Angular JS

AJAX

NODE JS

JQuery