

## Introduction to JavaScript / Modern JavaScript Essentials

Scripting Essentials, Responsive Design, Debugging, Classes, Functions, Security, ES6 / TypeScript Intro & More

### Course Snapshot

- **Course: Introduction to JavaScript | Modern JavaScript Essentials (TT4110)**
- **Duration:** 3 days
- **Audience & Skill-Level:** This Introductory-level course is targeted for aspiring web developers who have software development experience or background. The course can also be adjusted for non-developers upon request.
- **Hands-on Learning:** This course is approximately 50% hands-on lab to lecture ratio, combining engaging expert lessons, demos and group discussions with real-world, skills-focused machine-based labs and exercises. Student machines are required.
- **Delivery Options:** This course is available for **onsite private classroom presentation, live online virtual presentation**, or can be presented in a **blended learning format**. Please also ask about our **Self-Paced / Video / QuickSkills** or **Mini-Camp / Short Course** flexible delivery options.
- **Public Schedule:** This course has active dates on our live-online open enrollment **Public Schedule**.
- **Customizable:** This course agenda, topics and labs can be further adjusted to target your specific training skills objectives, tools and learning goals. Please ask for details.

### Overview

**Introduction to JavaScript | Modern JavaScript Essentials** is a hands-on geared for web developers who need to learn basic JavaScript to use with today's systems and architectures to build sophisticated web interfaces. The training will guide students through a balanced mixture of theory and practical labs to gain core JavaScript development skills and have them explore its related technologies through to the use of tools and libraries to ease the development of advanced web applications. Course attendees will be able to hit the ground running right after class, applying essential JavaScript to projects at both an architectural as well as a line by line coding level.

### Learning Objectives

Throughout this course, students will explore the practical use of the umbrella of technologies that work in conjunction with JavaScript as well as some of the tools, toolkits, and frameworks that can be used in conjunction with web development and deployment. The course thoroughly explores JavaScript and how it is used within the context of web applications, walking students through the different technologies that are used with JavaScript and exploring core aspects of JavaScript in terms of web applications, security, tools, and frameworks.

Working within in a hands-on learning environment guided by our expert team, attendees will learn to:

- Understand what JavaScript is and how it is used within the context of web applications
- Work with the different technologies that are the foundation for web applications.
- Understand and work with the fundamental aspects of JavaScript in terms of web applications, security, tools, and frameworks
- Learn to how to effectively work with the newest advances in JavaScript such as ES6 and TypeScript
- Develop code using conventions and optimal constructs for performance

**Need different skills or topics?** If your team requires different topics or tools, additional skills or custom approach, this course may be further adjusted to accommodate. We offer additional web development, scripting, full stack development, mobile development and other related topics that may be blended with this course for a track that best suits your needs.

### Audience & Pre-Requisites

This is an **introductory level** course for experienced software developers seeking to enhance and extend their core web development skillset leveraging JavaScript. Attendees should have practical experience developing basic software applications. This course provides an excellent foundation for continued learning to gain in-demand skills in in-demand skills and technologies such as NodeJS, Angular, React, Redux and more. This course can also be tailored for less experienced or non-developers as needed. Please inquire for details.

## Course Topics / Agenda

Please note that this list of topics is based on our standard course offering, evolved from typical industry uses and trends. We will work with you to tune this course and level of coverage to target the skills you need most. Course agenda, topics and labs are subject to adjust during live delivery in response to student skill level, interests and participation.

### Session: HTML Refresher (optional)

#### Lesson: HTML

- Define HTML and review its history
- Look at XHTML and its relationship to HTML
- Identify HTML limitations and improvements

#### Lesson: HTML5

- HTML5 Overview
- HTML5 Semantic Structure
- HTML5 Forms
- HTML5 Media Delivery

### Session: CSS Refresher (optional)

#### Lesson: CSS

- Learn the basics of CSS
- Meaning of cascading in CSS
- Declaring CSS within your HTML page
- Creating styles in an external CSS file
- Control how to display and position HTML elements
- Overriding standard tag behavior
- Adding new classes
- Using custom classes in your page

#### Lesson: CSS3 Overview

- What is new in CSS3
- The Advantages of CSS3
- Browser Support for CSS3

### Session: Introduction to JavaScript

#### Lesson: JavaScript Basics

- JavaScript Defined
- Variables and Operators
- Flow Control and Conditionals

#### Lesson: Debugging Tools

- Using the strict mode and setting breakpoints
- Browser debugging tools
- Monitoring resource usage and performance
- Emulating devices Exceptions in

### JavaScript

#### Lesson: JavaScript Functions

- Functions in JavaScript
- Invoking Functions
- Function Constructor
- Function Scope and Closures

#### Lesson: JavaScript Arrays, Math and Date

- JavaScript Literals
- JavaScript Arrays
- Working with Numbers and Dates

#### Lesson: JavaScript Event Handling and the DOM

- Events and Event Handling
- HTML Document Object Model
- Accessing the DOM
- Dynamically Working with the DOM
- DOM Challenges

#### Lesson: Object-Oriented JavaScript

- JavaScript “Objects” and “Classes”
- Constructors and Prototypes
- Prototypes
- Extending Classes with Prototype
- Reusable, Flexible Classes

### Session: Advanced JavaScript Topics

#### Lesson: ES6: The Next Step

- ES6 Defined
- ES6 Default and Rest Parameters
- IIFE and Closures
- ES6 Importing/Exporting Modules
- Arrays, ES6 Maps, and ES6 Sets
- Working Arrays with ES6
- Working Strings with ES6 Strings
- ES6 Constructs and Inheritance
- ES6: Getters and Setters

#### Lesson: TypeScript

- Strong Data Typing
- Compiling TypeScript to JavaScript
- TypeScript Datatypes

- TypeScript Classes and Interfaces

#### Lesson: Introduction to JSON and Ajax

- JavaScript Object Notation
- AJAX: Load Once and Change Data
- XMLHttpRequest is at the Center
- Calling the Service
- The Callback

#### Lesson: JavaScript Best Practices

- Code Conventions for the Lifecycle
- Resolving Shared Resources
- Constructs to Use
- Constructs to Avoid
- Memory Considerations

#### Lesson: JavaScript Scheduling, Execution, and Security

- Timers and Scheduling
- Execution Contexts
- Same Origin Policy and JavaScript
- Security Considerations

#### Lesson: HTML5 JavaScript API

- Cross-Domain Messaging
- Working with Web Storage
- Offline with Application Cache
- Geolocation: What, Why, and How

### Bonus Content / Time Permitting

#### Session: Working with XML

#### Lesson: XML DOM Mechanics

- HTML vs XML DOM
- Building an XML DOM
- Integrating XML into HTML
- XML Response Processing

#### Lesson: XSLT Applied

- XSLT in the Browser
- XSLT in Specific Browsers
- Sarissa Assistance
- XSLT Pluses and Minuses

## Student Materials

Each participant will receive a **Student Guide** with course notes, code samples, software tutorials, step-by-step written lab instructions, diagrams and related reference materials and resource links. Students will also receive the project files (or code, if applicable) and solutions required for the hands-on work.

## For More Information

All courses can be presented **onsite** or **online**, or in a **combined / flex / blended learning format**, tailored to target your specific audience, needs and learning goals. We also offer focused, flexible **short courses**, **self-paced learning** options, **recorded sessions** and more. We train beginner to advanced skills in all areas we cover, and offer **New Hire / Cohort Training**, **Boot Camps**, **Skills Immersion Programs**, **Reskilling Programs**, **Skills Migration & Transition Programs**, and more. We collaborate with you to ensure all courses are truly targeted to meet your specific needs and learning skills, maximizing your valuable training time, as well as your important budget.

Please also visit our extensive **Public Training Schedule** for training for smaller groups or individuals. Please contact us for course details, **Corporate Rates** and **Special Discount Offers**.

For more information about our dedicated training services, collaborative coaching services, courseware licensing options, public course schedule, training management services, partner programs, or to see our complete list of course offerings and special offers please visit us at [www.triveratech.com](http://www.triveratech.com), email [Info@triveratech.com](mailto:Info@triveratech.com) or call us toll free at **844-475-4559**. Our pricing and services are always satisfaction guaranteed.

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