

JavaScript Programming

Course ISI-1337D 5 Days Instructor-led, Hands on

Introduction

According to StackOverflow's 2023 Developer Survey, JavaScript is the most popular language in the world. That's because JavaScript is used by most websites, from small personal websites to the largest commercial sites.

In the old days, JavaScript was a difficult language to learn due to some quirky features in its early versions. But now, this class can help you learn JavaScript more easily than ever by skipping the confusing old features and jumping straight to the new features and best practices of modern JavaScript. When you finish this class, you'll have the JavaScript skills that are in such demand today.

This class is for web designers who use HTML and CSS to provide the content and formatting for web pages and want to use JavaScript to add functionality to those pages and Server-side programmers who use languages like Python, PHP, Java, or C# and would like to use JavaScript to provide client-side scripting for their web apps.

This course starts with how to get started quickly with Javascript, including: coding control statements working with arrays and strings, how to code functions and handle events, how to script the DOM, and how to test and debug an app.

Then, the course builds on that base by presenting the additional skills that every JavaScript programmer must have. That includes working with dates, times and timers, how to work with data validation and exceptions, how to work with web storage, objects and modules.

Finally, the course introduces you to Ajax, Node.js and working with drawing and animation.

Prerequisites

To get the most out of this course you'll need be familiar with HTML and CSS, and how to use these two technologies to create web pages. JavaScript lives inside the web browser, and it's used to interact with a web page loaded into the browser. So being able to write HTML and style it with CSS is an important skill to have before you learn JavaScript. Students should attend Course 1372D, Web Development with HTML5 and CSS3 or have equivalent skills and knowledge.

Course Objectives

Students will learn the following skills:

- How to code and run your first apps

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- How to get started with JavaScript
- How to code control statements
- How to work with arrays and strings
- How to code functions and handle events
- How to script the DOM
- How to test and debug an app
- How to work with dates, times, and timers
- How to work with data validation and exceptions
- How to work with web storage
- How to work with modules
- How to work with Node.js

Course Outline

Module 1: How to code and run your first apps

- An introduction to web apps and JavaScript
- How to use VS Code to work with existing web apps
- How to use VS Code to develop new web apps
- How to test a web app
- The components of a web app

Module 2: How to get started with JavaScript

- How to include JavaScript in an HTML document
- How to work with numbers
- How to work with strings
- How to get input and display output
- Two simple apps

Module 3: How to code control statements

- How to code conditional expressions
- How to get started with the selection structure
- More skills for working with the selection structure
- How to code the iteration structure

Module 4: How to work with arrays and strings

- How to get started with arrays
- More skills for working with arrays
- More skills for working with strings

Module 5: How to code functions and handle events

- Three ways to work with functions
- More skills for working with functions

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- How to handle events

Module 6: How to script the DOM

- How to get started with DOM scripting
- How to script forms and controls
- How to modify the DOM
- How to work with images

Module 7: How to test and debug an app

- An introduction to testing and debugging
- How to debug with Chrome's developer tools
- Other debugging techniques

Module 8: How to work with dates, times, and timers

- How to work with dates and times
- How to work with timers
- How to code the iteration structures

Module 9: How to work with data validation and exceptions

- How to use HTML data validation
- How to use the methods of an Array object
- How to work with exceptions

Module 10: How to work with objects

- How to get started with objects
- How to work with encapsulation
- How to work with inheritance and object composition
- More skills for working with objects

Module 11: How to work with Ajax

- Introduction to Ajax
- How to use closures
- How to make an Ajax request
- How to use asynchronous code in a module
- How to make cross-origin requests