

uCertify

Course Outline

Learning JavaScript



19 May 2024

1. Course Objective
2. Exercises, Quizzes, Flashcards & Glossary
Number of Questions
3. Expert Instructor-Led Training
4. ADA Compliant & JAWS Compatible Platform
5. State of the Art Educator Tools
6. Award Winning Learning Platform (LMS)
7. Chapter & Lessons
Syllabus
Chapter 1: Introduction
Chapter 2: Jumping into JavaScript
Chapter 3: Filling Your JavaScript Toolbox
Chapter 4: Using Data
Chapter 5: Working with Operators and Expressions
Chapter 6: Controlling Flow
Chapter 7: Using Arrays
Chapter 8: Making and Using Objects
Chapter 9: Writing and Running Functions
Chapter 10: Getting Oriented with Classes
Chapter 11: Making Things Happen with Events
Chapter 12: Writing Asynchronous JavaScript
Chapter 13: Using JavaScript Modules
Chapter 14: What a Web Browser Does
Chapter 15: Programming the Browser
Chapter 16: Getting Started with React
Chapter 17: Writing JSX
Chapter 18: Building React Components
Chapter 19: Using Data and Events in React

Chapter 20: Getting an Overview of Vue
Chapter 21: Introducing Vue Components
Chapter 22: Making Vue Templates
Chapter 23: Using Data and Reactivity
Chapter 24: Responding to Events
Chapter 25: Getting Started with Svelte
Chapter 26: Building with Components
Chapter 27: Designing Templates
Chapter 28: Using Directives
Chapter 29: Using the Component Lifecycle
Chapter 30: Advanced Svelte Reactivity
Chapter 31: Building from Scratch
Chapter 32: Optimizing and Bundling
Chapter 33: Testing Your JavaScript
Chapter 34: Node.js Fundamentals
Chapter 35: Streaming
Chapter 36: Working with Buffers
Chapter 37: Accessing the File System
Chapter 38: Networking with Node
Chapter 39: Using Events
Chapter 40: Error Handling and Debugging
Chapter 41: Accessing Databases
Chapter 42: Riding on the Express Train
Chapter 43: Registration and Authentication

Videos and How To

8. Live labs

Lab Tasks

Here's what you get

1. Course Objective

Prepare for a dynamic career in web development with our JavaScript course. Learn the JavaScript language and understand its real-world applications, gaining the skills needed to thrive in a rapidly evolving environment. Discover how JavaScript interacts with web browsers, mobile devices, servers, and more. Explore popular libraries and frameworks, adapt to new technologies, and become a versatile JavaScript programmer. Interactive lessons and hands-on labs provide the keys to your success in this course.

2. Exercises

There is no limit to the number of times learners can attempt these. Exercises come with detailed remediation, which ensures that learners are confident on the topic before proceeding.

89
EXERCISES

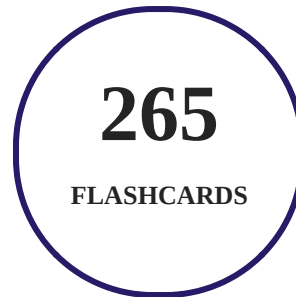
3. Quiz

Quizzes test your knowledge on the topics of the exam when you go through the course material. There is no limit to the number of times you can attempt it.

257
QUIZ

4. flashcards

Flashcards are effective memory-aiding tools that help you learn complex topics easily. The flashcard will help you in memorizing definitions, terminologies, key concepts, and more. There is no limit to the number of times learners can attempt these. Flashcards help master the key concepts.



5. Glossary of terms

uCertify provides detailed explanations of concepts relevant to the course through Glossary. It contains a list of frequently used terminologies along with its detailed explanation. Glossary defines the key terms.



6. Expert Instructor-Led Training

uCertify uses the content from the finest publishers and only the IT industry's finest instructors. They have a minimum of 15 years real-world experience and are subject matter experts in their fields. Unlike a live class, you can study at your own pace. This creates a personal learning experience and gives you all the benefit of hands-on training with the flexibility of doing it around your schedule 24/7.

7. ADA Compliant & JAWS Compatible Platform

uCertify course and labs are ADA (Americans with Disability Act) compliant. It is now more accessible to students with features such as:

- Change the font, size, and color of the content of the course
- Text-to-speech, reads the text into spoken words
- Interactive videos, how-tos videos come with transcripts and voice-over
- Interactive transcripts, each word is clickable. Students can clip a specific part of the video by clicking on a word or a portion of the text.

JAWS (Job Access with Speech) is a computer screen reader program for Microsoft Windows that reads the screen either with a text-to-speech output or by a Refreshable Braille display. Student can easily navigate uCertify course using JAWS shortcut keys.

8. State of the Art Educator Tools

uCertify knows the importance of instructors and provide tools to help them do their job effectively. Instructors are able to clone and customize course. Do ability grouping. Create sections. Design grade scale and grade formula. Create and schedule assessments. Educators can also move a student from self-paced to mentor-guided to instructor-led mode in three clicks.

9. Award Winning Learning Platform (LMS)

uCertify has developed an award winning, highly interactive yet simple to use platform. The SIIA CODiE Awards is the only peer-reviewed program to showcase business and education technology's finest products and services. Since 1986, thousands of products, services and solutions have been recognized for achieving excellence. uCertify has won CODiE awards consecutively for last 7 years:

- **2014**
 1. Best Postsecondary Learning Solution

- **2015**

1. Best Education Solution
2. Best Virtual Learning Solution
3. Best Student Assessment Solution
4. Best Postsecondary Learning Solution
5. Best Career and Workforce Readiness Solution
6. Best Instructional Solution in Other Curriculum Areas
7. Best Corporate Learning/Workforce Development Solution

- **2016**

1. Best Virtual Learning Solution
2. Best Education Cloud-based Solution
3. Best College and Career Readiness Solution
4. Best Corporate / Workforce Learning Solution
5. Best Postsecondary Learning Content Solution
6. Best Postsecondary LMS or Learning Platform
7. Best Learning Relationship Management Solution

- **2017**

1. Best Overall Education Solution
2. Best Student Assessment Solution
3. Best Corporate/Workforce Learning Solution
4. Best Higher Education LMS or Learning Platform

- **2018**

1. Best Higher Education LMS or Learning Platform
2. Best Instructional Solution in Other Curriculum Areas
3. Best Learning Relationship Management Solution

- **2019**

1. Best Virtual Learning Solution
2. Best Content Authoring Development or Curation Solution
3. Best Higher Education Learning Management Solution (LMS)

- 2020
 1. Best College and Career Readiness Solution
 2. Best Cross-Curricular Solution
 3. Best Virtual Learning Solution

10. Chapter & Lessons

uCertify brings these textbooks to life. It is full of interactive activities that keeps the learner engaged. uCertify brings all available learning resources for a topic in one place so that the learner can efficiently learn without going to multiple places. Challenge questions are also embedded in the chapters so learners can attempt those while they are learning about that particular topic. This helps them grasp the concepts better because they can go over it again right away which improves learning.

Learners can do Flashcards, Exercises, Quizzes and Labs related to each chapter. At the end of every lesson, uCertify courses guide the learners on the path they should follow.

Syllabus

Chapter 1: Introduction

- Why This Course?
- Conventions Used in This Course
- Foolish Assumptions
- Icons Used in This course
- Beyond the Course
- Where to Go from Here

Chapter 2: Jumping into JavaScript

- JavaScript, the Basics
- Reading and Copying JavaScript Code
- Starting Your Development Environment
- Writing Your First JavaScript Program
- Running Code in the Console
- Rerunning Commands in the Console
- Running Code in a Browser Window

Chapter 3: Filling Your JavaScript Toolbox

- Installing Node.js
- Configuring Visual Studio Code
- Documenting Your Code
- Coding Responsibly with Git

Chapter 4: Using Data

- Making Variables with let
- Making Constants with const
- Taking a Look at the Data Types

- Wrangling the Object: The Complex Data Type
- Examining the Array — a Special Kind of Object
- Getting a Handle on Scope

Chapter 5: Working with Operators and Expressions

- Building Expressions
- Operators: The Lineup
- Other Operators

Chapter 6: Controlling Flow

- Choosing a Path
- Making Loops

Chapter 7: Using Arrays

- Introducing Arrays
- Creating Arrays
- Accessing Array Elements
- Modifying Arrays
- Deleting Array Elements

- Programming with Array Methods
- Looping with Array Methods
- Destructuring Arrays
- Spreading Arrays

Chapter 8: Making and Using Objects

- Objects: The Basics
- Creating Objects
- Modifying Objects
- Comparing and Copying Objects
- Understanding Prototypes
- Deleting Object Properties

Chapter 9: Writing and Running Functions

- Functions: An Introduction
- Writing Functions
- Writing Methods
- Understanding Context and this
- Chaining Functions

Chapter 10: Getting Oriented with Classes

- Encapsulation
- Abstraction
- Inheritance
- Polymorphism
- Base Classes
- Derived Classes
- Constructors
- Properties and Methods
- Practicing and Becoming comfortable with Classes

Chapter 11: Making Things Happen with Events

- Understanding the JavaScript Runtime Model
- The Event Loop
- Listening for Events

Chapter 12: Writing Asynchronous JavaScript

- Understanding Asynchronous JavaScript

- Making Promises
- Using AJAX

Chapter 13: Using JavaScript Modules

- Defining Modules
- Exporting Modules
- Importing Modules
- Renaming Exports and Imports
- Importing a Module Object
- Loading Dynamic Modules
- Importing Modules into HTML

Chapter 14: What a Web Browser Does

- Interfacing with a Browser
- Introducing the Browser Engine
- The Rendering Engine
- Networking

Chapter 15: Programming the Browser

- Understanding Web APIs and Interfaces
- Getting Around the Navigator
- Stealing a Glimpse Through the Window
- Introducing the HTML DOM
- Knowing Your History

Chapter 16: Getting Started with React

- Understanding ReactJS
- Initializing a Project with Vite
- Introducing ReactDOM and the Virtual DOM

Chapter 17: Writing JSX

- Learning the Fundamentals of JSX
- Using JavaScript Expressions in JSX
- Conditionally Rendering JSX
- Making a List
- Styling React Apps and Components

Chapter 18: Building React Components

- Thinking in Components
- Recognizing the Two Types of Data
- Function Components
- Class Components
- The Component Lifecycle
- Using the Lifecycle in Function Components
- Composing Components

Chapter 19: Using Data and Events in React

- Event Handling in React
- Making Forms with React

Chapter 20: Getting an Overview of Vue

- Comparing Vue to React
- Scaffolding Your First Vue.js Application
- Mounting a Root Component
- Exploring Vue's Two Styles
- Installing Vue DevTools

Chapter 21: Introducing Vue Components

- Introducing the Single-File Component
- Naming Components
- Following the Component Lifecycle
- Handling Errors in Components

Chapter 22: Making Vue Templates

- Writing HTML Templates
- Using JavaScript in Templates
- Introducing Directives
- Conditional Rendering
- Rendering Lists
- Composing with Slots
- Adding Style to Components

Chapter 23: Using Data and Reactivity

- Passing and Using Props
- Binding Data to Templates

- Initializing and Changing Reactive Data
- Introducing `ref()`
- Computing Properties
- Reacting to State Changes with `Watch()`

Chapter 24: Responding to Events

- Setting Listeners with `v-on`
- Using Event Modifiers
- Binding Forms to Events and Data

Chapter 25: Getting Started with Svelte

- What Makes Svelte Different?
- Building Your Scaffolding
- Getting the Svelte for VS Code Extension
- Exploring a Svelte App
- Playing with Svelte

Chapter 26: Building with Components

- Writing Lean Components

- Identifying What's in a Component
- Adding Style to a Component

Chapter 27: Designing Templates

- Elements Are the Building Blocks
- Documenting Svelte with Comments
- Choosing a Path
- Creating Loops
- Writing Text Expressions
- Composing with Slots

Chapter 28: Using Directives

- Listening for Events with on:
- Creating Two-Way Bindings with :bind
- Using Transition Animations

Chapter 29: Using the Component Lifecycle

- The Svelte Lifecycle
- Fetching Data in Svelte

Chapter 30: Advanced Svelte Reactivity

- Constructing and Stocking the Store
- Getting and Setting Context

Chapter 31: Building from Scratch

- Why You Need a Build Tool
- Managing Dependencies with npm
- Writing Your First Files
- Writing a dev Script
- Making Modules

Chapter 32: Optimizing and Bundling

- Automating Your Build Script
- Converting to React

Chapter 33: Testing Your JavaScript

- Using a Linter
- Debugging in Chrome
- Unit Testing

Chapter 34: Node.js Fundamentals

- Learning What Makes Node.js Tick
- Learning the Parts of Node.js
- Introducing the Node.js Core Modules
- Recognizing What Node.js Is Good For
- Working with Node.js
- Using REPL
- Making and Using Node.js Modules
- Getting Data to Node Modules
- Node's Callback Pattern

Chapter 35: Streaming

- Jumping into Streams
- Creating Readable Streams
- Creating Writable Streams
- Producing Duplex Streams
- Transforming Streams

- Chaining Streams

Chapter 36: Working with Buffers

- Knowing Your Buffer Basics
- Decoding Buffers
- Creating Buffers
- Using Other Buffer Methods
- Iterating over Buffers

Chapter 37: Accessing the File System

- Importing the fs module
- Reading Files
- Writing Files
- Using Paths
- Getting File and Directory Information

Chapter 38: Networking with Node

- A Note about Security
- Making a Web Server

Chapter 39: Using Events

- Introducing EventEmitter
- Understanding and Using maxListeners
- Removing Listeners
- Emitting Once

Chapter 40: Error Handling and Debugging

- Knowing the Types of Errors
- Understanding Node.js's Error Object
- Exceptions versus Errors
- Handling Exceptions
- Debugging Node.js Programs

Chapter 41: Accessing Databases

- Getting Started with MongoDB
- Starting MongoDB
- Using Mongosh
- Using MongoDB from Node.js

Chapter 42: Riding on the Express Train

- Installing Express
- Server-Side Routing with Express
- Using Express Middleware
- Analyzing a Complete Express Server
- Serving a View
- Using the Express Application Generator

Chapter 43: Registration and Authentication

- Making and Configuring the Directory
- Adding the App and Server Modules
- Making Some Basic Routes
- Testing Your Routes
- Making a Schema with Mongoose
- Implementing User Registration
- Handling Authentication
- Generating and Using Tokens
- Finishing the Login Route

11. Live Labs

The benefits of live-labs are:

- Exam based practical tasks
- Real equipment, absolutely no simulations
- Access to the latest industry technologies
- Available anytime, anywhere on any device
- Break and Reset functionality
- No hardware costs

Lab Tasks

Jumping into JavaScript

- Creating an HTML Page Using JavaScript

Using Data

- Using Primitive Data Types
- Using Special Characters

Working with Operators and Expressions

- Using Comparison Operators
- Using Arithmetic Operators
- Using Logical Operators

Controlling Flow

- Using Conditional Statements
- Using the Ternary Operator
- Using the switch Statement
- Using the break Statement
- Using Loops
- Using the continue Statement

Using Arrays

- Generating an HTML List from an Array
- Creating a Shallow Copy of an Array

Making and Using Objects

- Printing the Properties of an Object

Writing and Running Functions

- Using Pass By Reference
- Creating a Movie Picker App
- Creating a Bookstore App

Getting Oriented with Classes

- Overriding a Method
- Accessing the static Member of a Class

Making Things Happen with Events

- Setting an Event Listener
- Using Event Bubbling
- Firing a Built-in Event

Writing Asynchronous JavaScript

- Creating an Asynchronous User Interface
- Creating a Synchronous User Interface
- Creating an Asynchronous Function

- Creating a Promise Chain
- Creating a Promise

Programming the Browser

- Using the Navigator userAgent Property
- Using the getElementById() Method
- Using the querySelectorAll() Method
- Creating and Appending Element Nodes

Writing JSX

- Creating a React Component
- Performing Conditional Rendering Using the Logical && Operator
- Performing Conditional Rendering Using the Conditional Operator
- Performing Conditional Rendering Using the Element Variable

Building React Components

- Using State
- Using props in a Class Component
- Using Props in a Function Component
- Creating a Class Component

Using Data and Events in React

- Handling an Event in React
- Creating a Form in React

Getting an Overview of Vue

- Creating a Vue Component Using the Composition API
- Creating a Vue Component Using the Options API

Introducing Vue Components

- Using the setup Attribute

Making Vue Templates

- Creating a Custom Directive

Using Data and Reactivity

- Using Props in Vue

Responding to Events

- Handling Events in Vue

Getting Started with Svelte

- Creating a Svelte Component

Building with Components

- Creating a Svelte Counter Component
- Creating a Prop in Svelte
- Using Reactive Statements in Svelte

Designing Templates

- Performing Conditional Rendering in Svelte
- Creating a Loop in Svelte

Using Directives

- Creating Transition in Svelte

Using the Component Lifecycle

- Using the tick() Method

Advanced Svelte Reactivity

- Creating a Store in Svelte

Building from Scratch

Optimizing and Bundling

Testing Your JavaScript

Node.js Fundamentals

- Using the os Module
- Creating a Web Server in Node.js
- Creating ES Modules
- Creating CommonJS Modules

Streaming

- Working with a Stream in the Paused Mode
- Working with a Stream in the Flowing Mode
- Creating a Streaming Counter

Working with Buffers

- Creating a Buffer
- Iterating over a Buffer

Accessing the File System

- Reading Data from a File
- Writing Data to a File

Networking with Node

- Creating a Web Server that Returns Information about Each Server Request

Using Events

- Creating an Instance of EventEmitter

- Finding the Default Number of Listeners for an Emitter

Error Handling and Debugging

- Creating an Error Object and Displaying its Properties
- Handling an Exception

Accessing Databases

- Creating a Collection in MongoDB

Riding on the Express Train

- Creating an Express Application
- Handling Route Parameters in Express

Registration and Authentication

Here's what you get

76

LIVE LABS

76

VIDEO TUTORIALS

02:44

HOURS

GET IN TOUCH:

 3187 Independence Drive
Livermore, CA 94551,
United States



+1-415-763-6300



support@ucertify.com



www.ucertify.com

www.uCertify.com