

INTRODUCTION TO PROGRAMMING FOR WEB DEVELOPMENT

COURSE 3

Activating Webpages with JavaScript

This is the third in a series of six courses from A&D Tutoring that, taken together, are designed to give students having *no prior experience of modern computer programming or Web technologies* the threshold knowledge and skills needed to succeed at advanced formal training in software and Web development. This course plus the two before it, which focus on programming in Python and on Web coding with HTML and CSS, form the core of the series. The content of this core is aligned with four separate certifications in the *Information Technology Specialist* suite of exams from Pearson Vue.

Description

JavaScript is the most commonly used programming language in the world and, along with Python, one of the two most in demand by employers. The language comes built into every Web browser and is the main driver of any dynamic behaviour or interactive functionality on webpages, on any platform. In this course, you will learn the structure and features of JavaScript as a language distinct from but reminiscent of Python, and you will use JavaScript along with HTML and CSS to create modern, animated webpages that are responsive to users. Duration is 100 hours of instructor contact time.

Upon successful completion of this course, you will be able to:

- understand and work with web browsers as JavaScript engines;
- declare and compute with JavaScript variables and constants of all primitive data types (number, string, Boolean, undefined, null), obeying all rules of scope and operator precedence;
- analyze and construct JavaScript code with conditional branching, error catching, and iteration;
- work with built-in JavaScript data structures and other objects with pre-defined methods;
- write code to define your own JavaScript functions and classes/objects with methods/properties;
- use the Browser Object Model and the Document Object Model in JavaScript to communicate interactively with webpage users, query and set browser properties, create and destroy webpage elements, dynamically alter element attributes and styles, and create drawings and timed animations;
- add listeners and handlers to webpage elements to deal with page, keyboard, mouse, and click events;
- use JavaScript to add dynamic styling, custom input validation, and submission options to web forms;
- access online data and applications through APIs and manage the states of browser sessions and apps.

Prerequisites

- Courses 1 and 2 of this series, or comparable prior experience in programming with Python (or a similar language) and coding for the Web with HTML and CSS.
- All-round familiarity with the Microsoft Windows operating system, command-line interfaces (e.g., PowerShell or Command Prompt), basic text editors, and Visual Studio Code.

Certification

The content and the level of this course are aligned explicitly with the [IT Specialist JavaScript Exam](#) from Pearson Vue's [IT Specialist Certification Program](#), and they also cover the entry-level [JSE Certification](#) from the JavaScript Institute. This course *together with* the previous one in our series—*Building Webpages with HTML and CSS*—can further prepare you for the [IT Specialist HTML5 Application Development Exam](#).