

# Introduction to Selenium 4 & Selenium 4 Web Testing

Leverage Selenium 4 to Analyze Web Applications, Test Web Pages Elements, Unit Testing, WebDriver API and More



## Course Snapshot

- **Course: Introduction to Selenium 4.x & Selenium Web Testing (TT3610-4)**
- **Duration:** 3 days
- **Audience:** Experienced web developers that are familiar with Java. Attendees should have a basic working knowledge of developing or testing software applications.
- **Language/Tools:** Selenium is the primary focus of this course. Incoming basic Java syntax knowledge is also recommended. Java and either Eclipse or IntelliJ are used to drive the tests and capture testing results.
- **Hands-on Learning:** This hands-on course combines 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

Selenium 4 is an API that allows the automation of web page interaction through browsers, including locating and interacting with specific features within a web interface. A tool such as Selenium IDE can be used to perform the testing in a relatively manual fashion. Selenium 4 also comes with WebDriver, which provides a programmatic interface (API) for controlling and managing Selenium tests and interactions. WebDriver provides a mechanism for capturing and repeating tests with a web interface.

**Introduction to Selenium 4** is a hands-on web testing course containing information on how to use Selenium 4 that is essential for experienced web developers and test engineers who need to verify web applications. This hands-on class focuses on practical skills and best practices to ensure the student learns the ins and outs of web application testing with Selenium and Java.

To participate in the hands-on labs, incoming students should have familiarity with basic Java syntax. Students without basic Java background are welcome to follow along with the labs and cut and paste code or lab solutions as needed.

## Learning Objectives

Students who attend **Introduction to Selenium 4** will leave the course armed with the skills required to recognize how to test web applications for sufficiency, using Selenium and the WebDriver interface to design and implement tests. Throughout the course you'll work with a sample Web Application that requires several testing scenarios.

Working in a hands-on learning environment led by our expert team you'll learn to:

- Understand web page testing needs and how Selenium meets those needs
- Analyze a web application from a functional and testing perspective
- Design, code, and run manual tests using Selenium IDE
- Use Selenium constructs to locate elements on a web page
- Test web page forms and the elements in those forms
- Review Java constructs needed to by testers when working with WebDriver
- Design code and run automated Selenium tests using the Java WebDriver API
- Use the WebDriver API to test advanced web features such as delayed responses and Ajax
- Using a combination of JUnit 5 features and WebDriver to consume streams of data for testing
- Focus on Best Practices for Selenium testing using the Java WebDriver API

**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 testing, Selenium, Cucumber, Gherkin, Python, TDD, BDD, programming, testing tools, test automation, QA, services, security and other related topics that may be blended with this course for a track that best suits your needs. Our team will collaborate with you to understand your needs and will target the course to focus on your specific learning objectives and goals.

### Audience & Pre-Requisites

This is an **introductory -level** Selenium course, designed for experienced web developers that are familiar with Java, who wish to get up and running on testing web applications. Ideally students should have approximately 6 months to a year of web development working knowledge.

**Take Before:** We recommend attendees have the skills in the course listed below, or attend this course as a pre-requisite:

- TT2190 Basic Java Primer for Non-Developers (QA, testers, etc) – 2 days

### TriveraTech's Selenium Course Suite

- TT2190 Java Basics Primer for Selenium Users – 3 days
- TT3610 Introduction to Selenium & Selenium Web Testing- 3 days
- TT3610-4 Introduction to Selenium 4 & Selenium 4 Web Testing- 3 days
- TT3613 Java and Selenium Basics for Non-Developers (QA, Testers, Selenium Users) – 5 days
- TT3622 Remote Test Automation with Selenium Grid – 1 day
- TT3621 Testing with Selenium Grid and Docker – 1 day

**Next Steps / Follow-On Training:** We offer an extensive list **Web Testing, Test Automation, Selenium, Unit Testing** and other related hands-on, skills-focused courses. Please contact us for recommendations for next steps in your learning journey based on your unique needs and goals.

**Enhanced Learning Services:** Please also ask about our **Pre-Training Class OnRamp & Prep / Primer** offerings, **Skills Gap Assessment Services, Case Studies, Knowledge Check Quizzes, Skills Immersion Programs & Camps, Collaborative Mentoring Services and Extended Learning Support & Post Training** services.

### 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. Topics, agenda and labs may adjust during live delivery based on audience skill-level, needs and participation.*

#### Session: Selenium Basics

##### Lesson: Introduction to Selenium

- Introduce Selenium
- Selenium concepts and terminology
- Manual testing using Selenium
- Automated testing using Selenium WebDriver
- [Tutorial: Selenium Lottery Application](#)
- [Lab: Analyzing the Web Application](#)

##### Lesson: Using the Selenium IDE

- Start the Selenium IDE
- Understand the components of the Selenium IDE

- Use Web Developer Inspector to inspect elements in a web page

##### Lesson: Creating and Running a Manual Test

- Testing planning and test plans
- Use Selenium IDE to create and run a manual test
- Understand Selenium IDE components
- Page transitions and globbing
- [Lab: Creating and Running a Manual Test](#)
- [Lab: Testing Alerts](#)

##### Session: Testing with Java and Selenium WebDriver

#### Lesson: JUnit 5 for Selenium

- Aspects of JUnit that are relevant for Selenium testing
- Understand the basics of testing with JUnit constructs
- Work with Java and JUnit for managing and running tests
- [Tutorial: Setup JUnit 5 Project library in IntelliJ](#)
- [Lab: Demo: JUnit](#)
- [Lab: Reapplying JUnit](#)
- [Lab: Demo JUnit](#)
- [Lab: Reapplying JUnit](#)
- [Lab: Demo: Using the JUnit Framework With Selenium](#)

**Lesson: Selenium WebDriver**

- Work with WebDriver in Java
- Find locations on web pages
- Work with different browsers
- Built-In Locators
- [Lab: Simple Maven Setup with Eclipse](#)
- [Tutorial: Setup IntelliJ for Using Maven](#)
- [Lab: Creating and Running a WebDriver Test](#)
- [Lab: Creating and Running a WebDriver Test](#)
- Lab: Testing With Other Browsers (optional)
- [Lab: Working With WebDriver Locators](#)
- [Lab: Adding WebDriver Tests](#)

**Lesson: WebDriver Deep Dive**

- WebDriver commands for working with forms
- Work with complex form components
- Take screenshots
- Work with alerts
- [Lab: Testing Forms With WebDriver](#)
- [Lab: Screenshots](#)

**Lesson: Advanced WebDriver**

- Use WebDriver to work with windows, tabs and iframes
- Utilize Actions class for mouse and keyboard actions
- Test file uploads and downloads
- Test AJAX elements
- Wait for events to happen

- Feed data sets into a testing sequence
- [Lab: Testing Wait Styles](#)

**Session: Selenium Best Practices and Processes****Lesson: Selenium Best Practices**

- Cover the best practices for testing web applications with Selenium
- Manage Names
- Multiple Browser Testing
- High Quality Tests and Test Plans
- Using Whitespace
- Efficient Operations
- Establish Selenium Standards

**Lesson: Testing Strategies and Patterns**

- Types of web application tests
- Strategies for locating elements
- Wrapping Selenium calls
- Verifying vs asserting
- Delayed exception handling
- [Lab: Using Delayed Exceptions](#)
- [Lab: Automated Running of Multiple Test Cases](#)

**Session: Next Steps with Selenium****Lesson: Page Object Model (POM)**

- Need for POM
- What is POM
- Implementing POM
- Using Object Repositories
- Page Factory
- [Lab: Building Page Object Models](#)
- [Lab: Build an Object Repository](#)
- [Lab: Using PageFactory](#)

**Additional Topics: Time Permitting**

*These topics will be included in your course materials but may or may not be presented during the live class depending on the pace of the course and attendee skill level and participation.*

**Lesson: Selenium Locators**

- Use Selenium IDE to find a specific spot on the web page
- Built-In Locators
- Find by HTML Features
- Find using CSS
- Find using XPath and the DOM
- [Lab: Working With Locators](#)

**Lesson: Selenese**

- Selenese Overview
- Selenese Commands
- Action Commands
- Accessor Commands
- Assertion Commands
- [Lab: Working with Selenese](#)

**Lesson: Forms**

- Selenese Commands for Working with Forms
- Form Actions
- Text Form Actions
- Keys
- Button Form Actions
- Other Actions
- [Lab: Testing Forms Using the Selenium IDE](#)

**For More Information**

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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