

Selenium with Python Course Syllabus

1. Introduction to Selenium with Python

- Basics of Selenium
- Overview of Selenium WebDriver
- Why Python for Selenium automation?
- Setting up the environment:
 - Installing Python and Selenium
 - Setting up IDEs (PyCharm, VS Code, or others)

2. Python Basics for Selenium

- Writing your first Python program
- Python syntax and variables
- Data types in Python
- Control flow statements:
 - If-else
 - Loops (for, while)
- Functions in Python

3. Locators in Selenium

- Introduction to locators
- Types of locators:
 - ID, Name, XPath, CSS Selector, Class Name, Tag Name, and Link Text
- Dynamic XPath
- Dynamic CSS selectors

4. Handling Web Elements

- Working with web elements (text fields, buttons, checkboxes, etc.)
- Handling dropdowns
- File upload functionality
- Handling alerts and popups
- Managing multiple windows and tabs

5. Advanced User Interactions

- Mouse hover actions
- Right-click operations
- Double-click actions
- Drag-and-drop operations

6. Utility Features in Selenium

- Capturing screenshots in Selenium with Python
- Parameterization in Selenium tests using Python

7. Synchronization in Selenium

- Implicit wait, explicit wait, and fluent wait in Selenium
- Differences and use cases:
 - Implicit Waits
 - Explicit WebDriver Waits
 - Fluent Wait

8. Working with External Data

- Reading data from files:
 - Handling Excel files using openpyxl
 - Reading and writing CSV files
- Database testing using MySQL

- Connecting to MySQL database in Python
- Fetching data for automation

9. Advanced Topics

- Handling Ajax calls in Selenium
- Use of listeners in Python with Selenium
- Handling JavaScript in Selenium WebDriver
- Resolving Stale Element Reference Exception

10. Headless Browser Testing

- Introduction to headless browsers
- Executing tests in headless mode with Selenium and Python