**Selenium Course Curriculum**

**Curriculum**

**Java Essentials for Testing With Selenium WebDriver**

**Java Programming Basics**

* Why Java for Selenium
* Installing Java
* Installing Eclipse
* First Eclipse Project
* First Java program
* Concept of class file
* Datatypes in Java
* String class and functions
  + Practical Examples on Strings handling
* Conditional Statements
  + If…else…
  + Switchcase
  + Practical Examples with conditions
* Loops
  + While Loop
  + For Loop
  + Practical Examples with loops
* Arrays
  + Single Dimensional Arrays
  + Two Dimensional arrays
  + Practical usage of arrays in Selenium
* Operators
* What are Functions?
* Function Input Parameters
* Function Return Types

**Object Oriented Programming**

* Local Variables
* Global Variables
* Static and Non-Static Variables
* Static and Non-Static Functions
* Creating Objects in Java
* Meaning of static
* Why is main method static?
* Object and Object References
* Call by reference and Value
* Overloading and Overriding Functions
* Access Modifiers - Public/Private/Default/Protected
* Constructors
* Interface
* Usage of Objects in Selenium
* Inheritance
* Usage of Inheritance in Selenium
* Creating Packages
* Accessing Classes across Packages

**Exception Handling**

* Exception handing with try catch block
* Importance of exception handling
* Exception and Error
* Throwable Class
* Final and Finally
* Throw and Throws
* Different Types of Exceptions
* Need of exception handling in Selenium framework

**Automating Excel file Operations**

* Creating/Opening XLS Files
* Reading/Writing Microsoft XLS Files
* Counting Rows and Columns
* Filling BG/Font Colours
* Practical Examples

**Automating Text File Operations**

* Creating/Opening Text Files
* Reading/Writing Text Files
* Practical Examples

**Selenium Introduction**

**Introduction to Selenium and its Components**

* What is Selenium?
* Who developed Selenium?
* Selenium Components

**Selenium IDE**

* Installing Selenium IDE
* Creating your First Selenium IDE script
* How to use Locators in Selenium IDE
* How to enhance a script using Selenium IDE
* Creating and Running Tests
* Creating and Running Test Suite

**Selenium WebDriver**

**WebDriver Introduction**

* Introduction to WebDriver & Comparison with Selenium RC
* Installing Selenium WebDriver
* Architecture of selenium Webdriver
* Creating your First Script in Webdriver

**Launching AUT and Inspecting properties of Elements**

* Launching AUT in FireFox
* Launching AUT in InternetExplorer
* Launching AUT in Chrome
* Launching AUT in Safari
* Inspecting properties of Elements on different Browsers
* Installing FireBug and FirePath
* Creating FireFox Profile

**Automating Operations on various Elements**

* Browser
* TextBox
* ListBox
* Links
* Check Box
* Radio Button
* HTML Tables
* Calendars

**Automating Keyboard and Mouse Events**

* Action Class
* KeyBoard Events
* Drag & Drop Actions
* Mouse Hover Action
* RightClick, Double Click & Tool Tip

**Handling multiple Windows**

* getwindowHandle()
* getwindowHandles()
* Switching between windows
* Handling elements present in different windows

**Handling Alerts**

* accept()
* dismiss()
* getText()
* sendKeys()

**Handling Frames**

* What is iFrame?
* Locating Frames
* Switching between Frames
* Handling Frames

**Creating Customize XPath/CSS Selectors**

* What is XPath
* When to Use XPath
* Absolute XPath/Relative XPath
* Specifying conditions with XPath

**Synchronization**

* ImplicitWait
* WebDriverWait
* FluentWait
* PageLoadTimeout

**TestNG**

**What is TestNG?**

* Advantages of TestNG over JUnit
* Why do we need TestNG in Selenium?
* Installing TestNG in Eclipse
* Creating a New TestNG Test File
* @Test annotation
* Running the Test
* Checking reports created by TestNG
* Generating HTML Reports
* Annotations used in TestNG
* Validating Tests with Assertions
* Creating multiple Tests
* Prioritizing Tests
* Parameterizing Tests with dataProvider
* TestNG dataProvider with Excel
* Creating and Running Test Suites with TestNG.xml
* Parallel Test Execution with TestNG
* Cross Browser Testing using TestNG

**Automation Test Frameworks**

* Modular Driven Framework
* Keyword Driven Framework
* Data Driven Framework
* Hybrid Framework

**Page Object Model (POM) & Page Factory in Selenium**

* What is POM
* Why POM?
* Advantages of POM
* Creating POM Tests
* What is Page Factory?
* Creating Tests with Page Factory

**AutoIT**

* Installing AutoIT
* Components of AutoIT
* Using FinderTool
* AutoIT commands
* Creating Scripts in AutoIT
* Creating executable files
* Running AutoIT Scripts from Selenium

**Selenium GRID**

* What is Selenium Grid?
* When to Use Selenium Grid?
* What is a Hub and Node?
* How to Install and Use Grid 2.0?
* Designing Test Scripts That Can Run on the Grid
* Using the DesiredCapabilites Object
* Using the RemoteWebDriver Object
* Running a Sample Test Case on the Grid
* Sequential and Parallel Test Execution
* Running Tests on different Operating Systems
* Running Tests on different Browsers

**MAVEN & JENKINS**

**MAVEN**

* What is Maven and Why Maven?
* Installing/Configuring Maven
* Creating Maven Project
* Importing Maven Project into Eclipse
* What is POM.xml?
* Adding Dependencies to POM.xml

**JENKINS**

* Installing/Configuring Jenkins
* Scheduling Test Execution in Jenkins
* Auto mail configuration in Jenkins

**GIT**

* Downloading and Installing GIT
* Installing GIT
* GIT Bash commands
* Uploading project to GIT

**Overview of QTP / UFT**