

## UCS662: TEST AUTOMATION

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2	0	2	3.0

**Course Objectives:** The course provides understanding of software testing and how to use various tools (like Selenium and TestNG etc.) used for automation of software testing.

**Introduction to Software Testing:** Seven principles of Software Testing, SDLC vs STLC, Testing Life Cycle, Usability Testing, why do we need Usability Testing, how to do Usability testing, Advantages & Disadvantages, Functional Testing, End to End Testing, Methods, Advantages & Disadvantages, Compatibility Testing, Types GUI testing, Techniques API testing, Advantages

**Test Automation:** Selenium: Selenium components, Selenium Architecture, TestNG: Installing TestNG in Eclipse, TestNG Annotations – Understanding usage, setting priority of execution for test cases, Hard Assertion, Soft Assertion, TestNG Reports, ANT- Downloading & Configuring, XSLT report generation using TestNG and Ant.

**Introduction to Selenium 3.x:** Describe Selenium 3.x advantages and implementation, Define drivers for Firefox, IE, chrome, iPhone, Android etc. Analyze first Selenium Code, differentiate between Close and Quit, Describe Firepath and firebug Add-ons installation in Mozilla, inspect elements in Mozilla, Chrome and IE, Identifying Web Elements using id, name, class, Generate own CSS Selectors. Differentiate between performance of CSS Selectors as compared to Xpaths, define class attribute, Handle Dynamic objects/ids on the page, Analyze whether object is present on page or not

**Manual Testing:** Manual Testing, Manual Testing – How to Approach? Manual Testing – Myth and fallacy, Defect Life Cycle, Qualities of a good Manual Tester, Manual Testing Vs Automation Testing, Types, System Testing, Acceptance Testing, Unit Testing, Techniques, Integration Testing, Smoke- Sanity Testing

**Introduction to Test Design:** Test Scenario, Test Case Design, Test Basis Traceability Matrix

### Course Learning Outcomes (CLOs) / Course Objectives (COs):

After the completion of the course the student will be able to:

1. Understand the concepts related to software testing and test automation.
2. Take into account the different considerations when planning automated tests vs. manual tests
3. Architect the test project and fit it to the architecture of the tested application
4. Design and implement highly reliable automated tests
5. Understand how different types of automated tests will fit into your testing strategy,

including unit testing, load and performance testing, visual testing, and more

**Text Books:**

1. Axelrod Arnon, Complete Guide to Test Automation: Techniques, Practices, and Patterns for Building and Maintaining Effective Software Projects, A press (2018).
2. Gundecha U. and Cocchiaro C., Learn Selenium: Build data-driven test frameworks for mobile and web applications with Selenium Web Driver 3, Packt (2019).

**Reference Books:**

1. Diego Molina, Selenium Fundamentals, Packt (2018).
2. Aditya P. Mathur, Foundations of Software Testing, Pearson Education(2008).