



## **Bundle Combo - Software Testing (Manual and Automation) – Course Syllabus**

### **Software Testing - Manual Testing – course syllabus**

#### ***1) Software Testing Introduction***

- > What is Software testing?
- > Importance of Software testing
- > How to conduct Software testing.
- > Basic terminology of Software testing
- > Manual Testing Process
- > Difference between Manual and Automated Testing
- > Software testing Roles and Responsibilities

#### ***2) Software Development Life Cycle and various SDLC Models***

Phases of Software Development Life Cycle

- i) Requirements Phase.
- ii) Analysis Phase.

- iii) Design phase.
- iv) Coding Phase.
- v) Testing phase.
- vi) Release and Maintenance Phase.

#### Software Development Life Cycle Models

- i) Waterfall Model.
- ii) V Model
- iii) Agile Model.
- iv) Prototype Model.
- v) Spiral Model.
- Etc...

#### Static Techniques:

- i) Informal Reviews
- ii) Walkthroughs
- iii) Technical Reviews
- iv) Inspection

#### Dynamic Techniques:

##### **a) Black-box Test Techniques**

- i) Equivalence Partitioning
- ii) Boundary Value Analysis
- iii) Decision Table Testing
- iv) State Transition Testing
- v) Use Case Testing

##### **b) White-box Test Techniques**

- i) Statement Coverage Testing
- ii) Branch Coverage Testing
- iii) Path Coverage Testing
- iv) Conditional Coverage Testing
- v) Loop Coverage Testing
- Etc...

##### **c) Experience-based Test Techniques**

- i) Error Guessing
- ii) Exploratory Testing
- iii) Checklist-based Testing

#### ***4) Levels and Types of Software Testing***

Four Levels of Testing

- i) Unit Testing
- ii) Integration Testing
- iii) System Testing
- iv) Acceptance Testing

Types of Testing

#### **i) Functional Testing**

Unit Testing  
Integration Testing  
System Testing  
User Acceptance Testing.  
Sanity/Smoke Testing.  
Re & Regression Testing.  
etc...

#### **Note:**

Functional Testing is a Test type, and Unit Testing, Integration Testing, System Testing and Acceptance Testing are the Test levels.

Functional Testing is conducted in all Test Levels (Unit, Integration, System, and Acceptance Testing)

Sanity and Smoke Testing are Test Execution levels of Functional Testing

Retesting and Regression are for Change related Testing.

#### **ii) Non Functional Testing**

Performance Testing. (Load, Stress, Spike and Endurance Testing)  
Usability Testing  
Compatibility Testing  
Reliability Testing  
Security Testing  
Cookies Testing

Session Testing  
Recovery Testing  
Installation Testing  
Adhoc Testing.  
Risk Based Testing.  
I18N Testing.  
L10N Testing.  
Compliance Testing.  
Etc...

## **Software Testing - Automation Testing with Selenium**

### *Module I: Java Programming for Selenium*

#### *Java Standard Edition (Core Java)*

1. Java Environment Setup
2. Java keywords and Identifiers
3. Java Syntax
4. Java Object Oriented Programming Basics  
(Class, Object, Method, Constructor, and Interface)
5. Java Program Structure
6. Java Comments
7. Java Modifiers
8. Java Data Types
9. Java Variables
10. Java Operators
11. Java Control Flow
  - i. Decision Making/Conditional Statements
  - ii. Loop Statements
  - iii. Branching Statements

12. String Handling in Java

13. Java Data Structures

14. Java IO

Read User Input, Display Program Output

File Handling

Database Connectivity

15. Java Methods

i. Built-in Methods

ii. User-Defined Methods

16. Java Exception Handling

17. Java Object-Oriented Programming

i. Inheritance

ii. Polymorphism

iii. Abstraction

iv. Encapsulation

etc,

### ***Module 2: Selenium WebDriver***

1. Selenium Test Environment Setup

2. Inspect Web/HTML Elements

3. Locating Elements in Selenium (Using Element Locators)

4. Performing Actions on Elements (Using Selenium WebDriver Methods)

5. Selenium Page Object Model (Creating Object Repositories)

6. Writing Selenium Test Cases

Write Selenium Test Steps

Synchronization

Inserting Verification Points

Handling Run-time Errors

Etc,

### ***Module 3: TestNG Testing Framework for Selenium***

1. Install TestNG plug-in for Eclipse IDE

2. Create Test Batches (TestNG Programs)
3. Prioritize Test Cases
4. Grouping Test Cases
5. Executing Test Batches
6. Generating Test Reports  
etc,

***Module 4: Selenium Automation Framework***

1. Selenium Test Environment Setup  
(By Integrating Maven with Selenium)
2. Create a Folder Structure  
(To store Automation resources like Page Objects, Reusable Functions, Test Cases, Test Data, Test Results, etc,)
3. Create Automation Resources  
(Object Repositories/Page Objects, Reusable Functions, etc,)
4. Create Selenium Test Cases
5. Execute/Run Test Batches
6. Analyze Test Results & Report Defects.
7. Re & Regression Testing
8. Maintain Test Automation Resources

Note: Selenium Syllabus depends on our selected tools and plugins for Selenium. (Ex: Java, TestNG, etc.)