

**Course Name:- Software/ Application Testing Assistant**

**Duration: 6 Months**

**Module 1:** Working with Operating System

**Module 2:** Manual Testing

**Module 3:** Java Programming

**Module 4:** Introduction to Database and Database Testing (Manual)

**Module 5:** Automation Testing – with selenium

**Module 6:** Employability Skills

**Module 7:** Project/ OJT

**Module 1: Working with Operating System**

- Operating and types of Operating System
- Process management and Multithreading
- Memory management
- Open source operating system
- Overview of Linux & Ubuntu operating system

**Module 2: Manual Testing**

- Software Testing principles
- Software Development Life Cycle (SDLC)
  - SDLC Phases
  - SDLC Models
- What is QA
- Difference between QA and QC
- Software Testing Life Cycle (STLC)
  - Requirement Analysis
  - Test Plan Creation
  - Environment setup
  - Test case Execution
  - Defect Logging
  - Test Cycle Closure
- Types of Software Testing
  - Manual testing
  - Automation testing
- Test Design Techniques
  - White box testing
  - Black box testing
  - Grey box testing

- Testing Levels
  - Functional
  - Non-Functional
  - Unit Testing
  - Integration Testing
  - System Testing
  - Acceptance Testing
- Software Testing Documentation
  - Why documentation is necessary
  - Common documentation
    1. Test plan
    2. Test Scenario
    3. Test Case
    4. Traceability Matrix

### **Module 3: Java Programming**

- Introduction to Java
- JDK, JRE & JVM
- Variable & keywords
- Data types & Operators
- Control Statements
- What is OOPs
- Advantages of OOPs
- Application of Oops concepts in Java
- Classes and Objects
- Constructors and Destructors
- Encapsulation
- Inheritance
- Polymorphism
- Abstraction
- Arrays & Strings
- Errors and Exceptions
- Multithreading

### **Module 4: Introduction to Database and Database Testing (Manual)**

- Introduction to Database concepts and its need
- Database Terminology (Data, Record/Tuple, Table, Database, field/attribute Concept of Keys: Candidate key, Primary key, Alternate key, and Foreign key )
- Introduction to SQL.

- Database Engine (MS SQL Server, Oracle, MYSQL etc.)
- SQL Syntax, Data types, Operators, Expressions
- Creating Database and table
- Defining primary key and Foreign key
- Inserting records
- Displaying records using SELECT command and WHERE clause
- Modifying records using UPDATE
- Deleting records
- Introduction to Database Testing
- Importance of Database Testing
- Database Testing Process
- Types of database testing
- Perform database testing manually

### **Module 5: Automation Testing – with selenium**

- What is Automation Testing
- Advantages / Disadvantages of Automation testing
- Test Automation Framework
- Various Automation Tools – Functional and Non-Functional
- Introduction to Selenium
- Selenium IDE installation & introduction to its features
- Selenium commands and its types
- Selenium RC
- Selenium Web driver
- Selenium Grid
- Testing Framework

### **Module 6: Employability Skills**

- Introduction to Employability Skills
- Constitutional values - Citizenship
- Becoming a Professional in the 21st Century
- Basic English Skills
- Career Development & Goal Setting
- Communication Skills
- Diversity & Inclusion
- Financial and Legal Literacy
- Essential Digital Skills
- Entrepreneurship
- Customer Service
- Getting Ready for Apprenticeship & Jobs

### **Module 7: Project/ OJT**