ITSkillsCenter

SOFTWARE TESTING

12 Weeks Curriculum

Working with testing tools and frameworks such as **Selenium, Postman, JIRA**, and **Git**

PREREQUISITE

PREREQUISITE

- Willingness to learn
- Laptop (8GB RAM minimum)
- Basic Computer Knowledge

WHAT YOU WILL LEARN

You will gain the skills to test software effectively and identify defects early, ensuring product quality, reliability, and a seamless user experience.

By the end of this course you will have;

1. Gained a solid understanding of software testing concepts, methodologies, and best practices used in real-world development environments.
2. Developed hands-on experience in manual and automated testing, including writing and executing test cases, identifying bugs, and generating test reports.
3. Learned how to use industry-standard tools such as JIRA, Selenium, Postman, Git, and JMeter for effective testing, collaboration, and performance evaluation.
4. Understood how to integrate testing into the Software Development Life Cycle (SDLC) and Agile workflows for continuous delivery and quality assurance.

ITSkillsCenter

SYLLABUS

Month 1 — Introduction to Software Testing

Week 1: Fundamentals of Software Testing

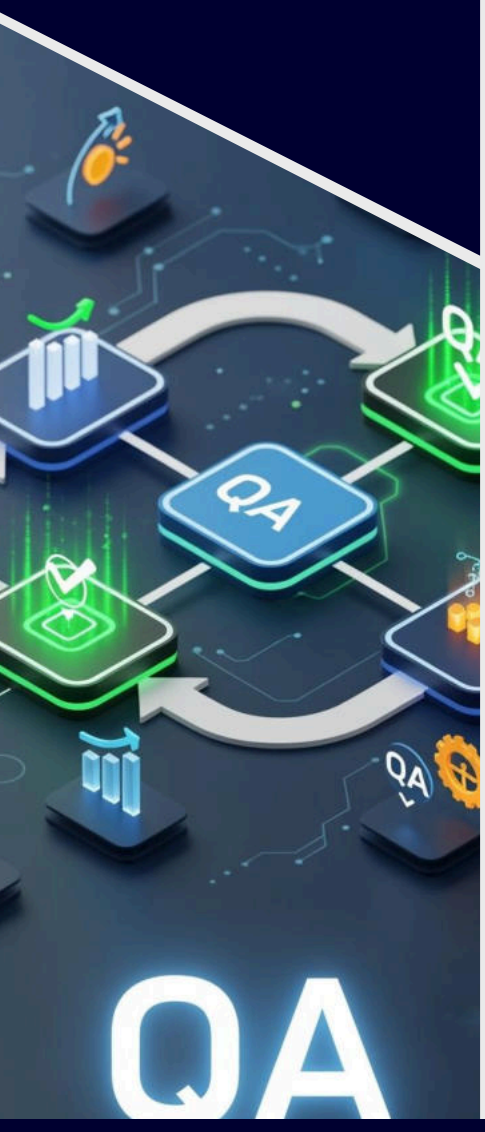
- **Topics:**
  - What is Software Testing?
  - Importance of Software Quality Assurance
  - The Software Development Life Cycle (SDLC)
  - The Software Testing Life Cycle (STLC)
  - Types of Testing (Manual vs Automated)
- **Activities:**
  - Case study: Why testing matters in product development
  - Identify bugs in a simple web or mobile application demo)

Week 2: Testing Principles and Methods

- **Topics:**
  - Seven Principles of Software Testing
  - Verification vs Validation
  - Testing Levels (Unit, Integration, System, Acceptance)
  - Testing Types (Functional, Non-functional, Regression, Smoke, Sanity)
  - Understanding Test Artifacts (Test Plan, Test Case, Test Report)
- **Activities:**
  - Write your first test plan and test cases for a simple login page

ITSkillsCenter

SYLLABUS



Week 3: Software Development Models

- **Topics:**
  - Waterfall Model
  - Agile Methodology (Scrum & Kanban)
  - V-Model and Iterative Model
  - Role of Testers in Agile Teams
- **Activities:**
  - Simulate a sprint cycle and identify testing touchpoints
  - Group activity: Review Agile user stories and acceptance criteria

Month 2 — Manual Testing Essentials

Week 1: Test Case Design Techniques

- **Topics:**
  - What makes a good test case?
  - Black-box and White-box testing
  - Test design techniques: Equivalence Partitioning, Boundary Value Analysis, Decision Tables
  - Test Scenario vs Test Case
- **Activities:**
  - Write test cases for a registration form
  - Peer review of test cases

ITSkillsCenter

SYLLABUS

Week 2: Defect Management

Topics:

- What is a defect/bug?
- Bug lifecycle and workflow
- Defect reporting and tracking tools (e.g., JIRA, Trello, ClickUp)
- Severity vs Priority

Activities:

- Report bugs using a sample bug-tracking tool
- Role-play: Developer–Tester bug review meeting

Week 3: Test Execution and Reporting

Topics:

- Preparing test environment
- Executing manual test cases
- Logging defects and capturing evidence
- Test summary reports and best practices

Activities:

- Execute a sample test plan
- Present test results to a mock stakeholder team

ITSkillsCenter

SYLLABUS

Month 3 — Automation Testing Fundamentals

Week 1: Introduction to Test Automation

Topics:

- Why automate? Benefits and limitations
- Manual vs Automated Testing
- Popular automation tools and frameworks
- Overview of Selenium and its components

Activities:

- Install Selenium WebDriver
- Write your first automated test script (basic browser navigation)

Week 2: Working with Selenium

Topics:

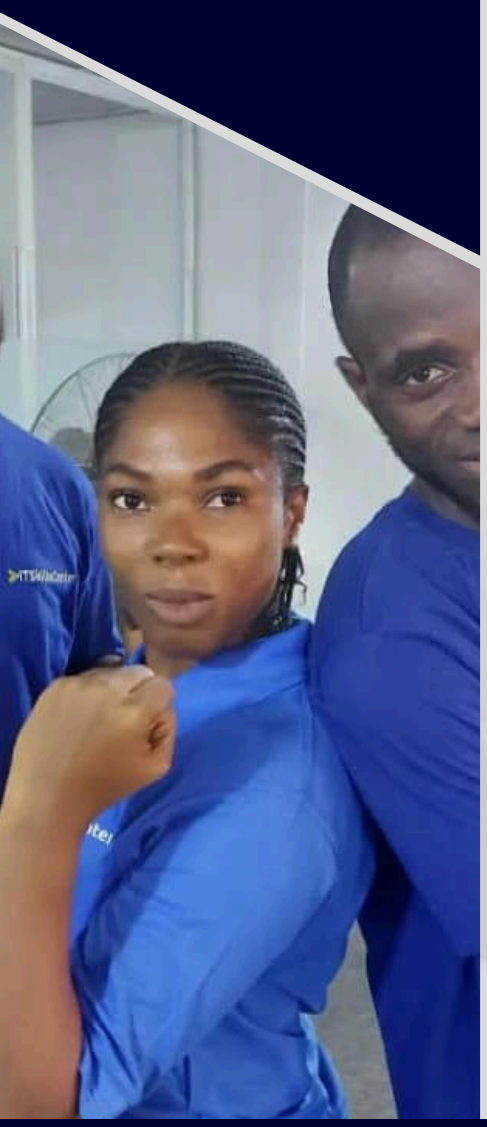
- Locators in Selenium (ID, Name, XPath, CSS Selectors)
- Performing actions: click, sendKeys, assertions
- Handling alerts, dropdowns, and waits
- Organizing scripts and reusability concepts

Activities:

- Automate testing of a sample login form
- Debug and improve a shared automation script

ITSkillsCenter

SYLLABUS



Week 3: Test Frameworks & Reporting

Topics:

- Introduction to TestNG or Pytest
- Creating and managing test suites
- Assertions and test results logging
- Generating and reading test reports

Activities:

- Build a small automation project with multiple test cases
- Share test report presentation with peers

Month 4 — Advanced Testing and Career Preparation

Week 1: API and Mobile Testing

Topics:

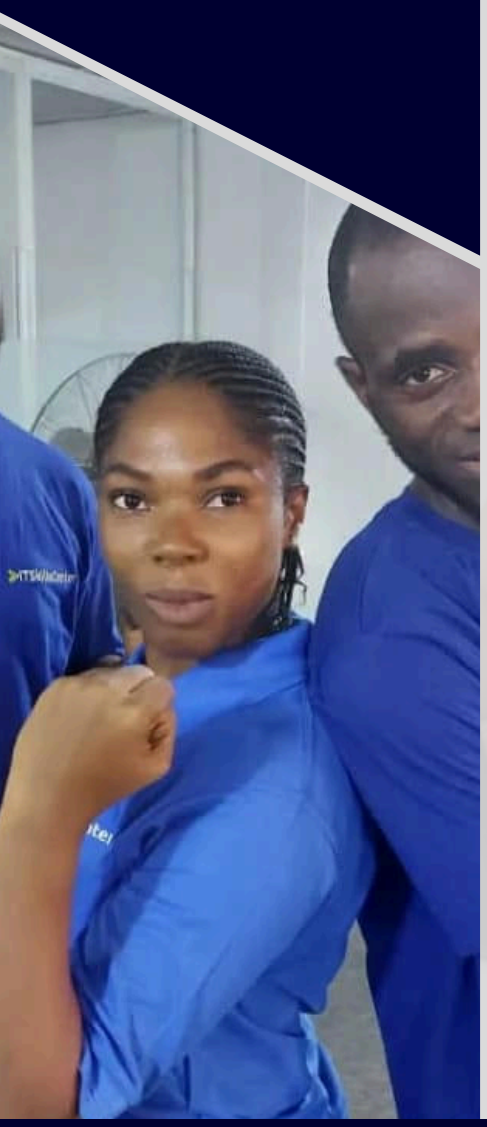
- Introduction to API Testing with Postman
- Understanding REST and JSON responses
- Mobile Testing basics (Android/iOS)
- Common tools: Postman, Appium

Activities:

- Test API endpoints using Postman
- Demonstrate mobile app test flow using a sample app

ITSkillsCenter

SYLLABUS



Week 2: Performance and Security Testing

Topics:

- Basics of Performance Testing (Load, Stress, Scalability)
- Tools: JMeter introduction
- Fundamentals of Security Testing
- Testing for vulnerabilities and data protection

Activities:

- Conduct a mini load test using JMeter
- Case discussion: Common web security flaws

Week 3: Version Control and Collaboration

Topics:

- Introduction to Git and GitHub for Testers
- Committing, branching, and pull requests
- Collaborating with developers in test-driven environments

Activities:

- Create a test repository on GitHub
- Collaborate on test scripts as a team

ITSkillsCenter

SYLLABUS

Week 4: Project & Career Readiness

Topics:

- Capstone Project Presentation
- Best Practices for QA Documentation
- Career Paths in Software Testing
- Building a Professional Portfolio and Resume

Activities:

- Final testing project presentation
- Mock interview and feedback session

CONTACT INFORMATION

11, Adekoya estate off college road,
Ogba, Lagos state.

(+234) 811 1883 671.

ITSkillsCenter