DEERWALK TRAINING CENTER

Quality Assurance (QA) Course Outline

Nature of the Course: Theory + Practical

Duration: 20 Days (40 Hours)

Course Overview

This course provides a comprehensive foundation in Software Quality Assurance (QA) — from manual testing fundamentals to automation testing and performance testing. Students will gain both theoretical knowledge and practical exposure to tools like JIRA, Postman, Selenium, JMeter, and SQL for data-driven testing. By the end, participants will be confident in analyzing requirements, creating test cases, finding and reporting bugs, executing tests, and building a QA career path.

UNIT I: QA INTRODUCTION

- Understanding Software Testing Concepts
- SDLC
- AGILE(Standup, Sprint, Sprint Planning, Sprint Retrospects)
- Why Become a QA Tester
- Roles and Responsibilities of a QA Tester
- Importance of Software Testing in SDLC
- Quality Assurance vs. Quality Control

UNIT II: SOFTWARE TEST LIFE CYCLE (STLC)

- Requirement Analysis
- Test Planning
- Test Case Development
- Test Environment Setup
- Test Execution
- Test Closure Activities

UNIT III: THE V-MODEL

- Concept and Workflow of V-Model
- Advantages and Disadvantages of the V-Model

UNIT IV: TYPES OF TESTING

- Based on Phase: Unit, Integration, System, Acceptance
- Based on Contents: Functional, Non-functional
- Based on Methods: Manual, Automation

- Based on Functions: Smoke, Regression, Sanity, Exploratory
- Based on User Involvement: Alpha, Beta, UAT
- Practical: Categorize test types from given test scenarios.

UNIT V: TEST PLANNING

- Test Scope and Objectives
- Testing Approach and Strategy
- Test Deliverables
- Test Environment
- Suspension, Resumption, and Exit Criteria
- QA Resources and Role Allocation
- Practical: Draft a Test Plan Document for a sample project.

UNIT VI: TEST CASES, TEST DATA & TEST RESULTS

- Elements of a Good Test Case
- Writing Effective Test Cases
- Test Data Preparation and Properties
- Test Result Documentation and Reporting
- Practical: Create test cases, execute them, and record results in Excel or JIRA.

UNIT VII: TEST ENVIRONMENT SETUP

- Understanding Environments: Development, QA, UAT, Production
- Importance of Stable Test Environment

UNIT VIII: BUG LIFE CYCLE

- Defect Identification and Logging
- Defect Life Cycle / Workflow
- Defect Severity vs. Priority
- Bug Reporting Guidelines and Standards
- Bug Triage, BUG Fixes, Hot Fixes
- Practical: Report and track bugs using EXCEL/JIRA.

UNIT IX: TEST CLOSER

- QA Manager, QA Lead, Release Engineer
- Understand team hierarchy
- Release Notes and sign offs

UNIT X: API TESTING

- Introduction to APIs and Endpoints
- HTTP Methods and Status Codes
- Request Headers and Body

- API Testing using Postman
- Response Validation and Assertions
- Practical: Perform CRUD operations using Postman on a demo API.

UNIT XI: TEST AUTOMATION

- Introduction to Automation Testing
- Manual vs Automation – When to Automate
- Popular Automation Tools (Selenium, Cypress, Playwright)
- Introduction to Selenium for UI Testing
- BDD Examples Practice
- Browsing Web via Automation using Selenium
- Overview of Data-Driven Testing (SQL)
- Practical: Automate basic login test case using Selenium IDE or script.

UNIT XII: PERFORMANCE TESTING USING JMETER

- Introduction to Performance and Load Testing
- JMeter Interface Overview
- Creating and Running Test Plans in JMeter
- Analyzing Performance Reports
- Practical: Run a performance test scenario using Apache JMeter.

UNIT XIII: CAREER & QA BEST PRACTICES

- QA Best Practices and Mindset
- Effective Communication in QA
- Common Mistakes to Avoid as a QA
- Career Path in QA: Manual, Automation, API, Performance, Security Testing
- Resume & Interview Preparation Tips for QA Roles
- Practical: Build your QA Portfolio and Resume.

Course Outcomes

- Understand the foundation of Quality Assurance (Manual & Automation)
- Apply QA best practices in real-world scenarios
- Write and execute effective test cases
- Use JIRA for bug tracking and reporting
- Perform API Testing using Postman
- Conduct Performance Testing using JMeter
- Understand UI Automation with Selenium
- Implement Data-Driven Testing using SQL
- Kickstart a career in QA confidently