



TECHNOCATION FREELANCING TRAINING INSTITUTE & SOFTWARE HOUSE

Professional Software Quality Assurance (SQA) Course Outline

Module 1: Introduction to Software Quality Assurance (SQA)

- What is Software Quality Assurance?
 - Importance of Quality Assurance in SDLC
 - Differences Between QA, QC & Testing
 - SQA Standards & Compliance (ISO, IEEE, CMMI)
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Module 2: Software Development Life Cycle (SDLC) & QA Process

- Overview of SDLC Models (Waterfall, Agile, DevOps)
 - Role of QA in Different SDLC Phases
 - Software Testing Life Cycle (STLC)
 - Risk Management & Defect Prevention
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Module 3: Types of Software Testing

- **Manual Testing:** Functional, Regression, Smoke, Sanity Testing
 - **Non-Functional Testing:** Performance, Security, Usability, Compatibility
 - **Automated Testing:** When & Why to Automate?
 - **Specialized Testing:** Mobile, API, Database, Cloud Testing
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Module 4: Test Planning & Documentation

- Writing Test Plans & Test Strategies
 - Test Case Design Techniques (Boundary Value, Equivalence Partitioning)
 - Test Execution & Reporting Defects
 - Bug Life Cycle & Defect Tracking
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Module 5: Test Automation & Tools

- Introduction to Test Automation Frameworks
 - Selenium WebDriver for Web Application Testing
 - API Testing with Postman & REST Assured
 - Performance Testing with JMeter
 - Continuous Testing in CI/CD Pipelines (Jenkins, GitHub Actions)
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Module 6: Agile & DevOps Testing Practices

- QA Role in Agile Development (Scrum, Kanban)
 - Test-Driven Development (TDD) & Behavior-Driven Development (BDD)
 - DevOps & Continuous Integration (CI/CD) for Testing
 - Using Test Management Tools (JIRA, TestRail)
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Module 7: Security & Performance Testing

- Basics of Security Testing & Common Vulnerabilities (OWASP)
 - Load & Stress Testing with JMeter
 - Penetration Testing Basics
 - Cloud & Mobile App Performance Testing
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Module 8: SQA Metrics, Reporting & Compliance

- Measuring Software Quality: KPIs & Metrics
- Test Coverage & Defect Density Analysis
- Compliance & Regulatory Requirements (ISO 9001, GDPR, HIPAA)
- Preparing SQA Reports for Stakeholders

Final Module: Certification & Hands-On Projects

- Real-World QA Project: End-to-End Software Testing
- ISTQB Certification Overview & Preparation
- Mock Interviews & Resume Building for QA Jobs
- Career Growth in QA: Manual vs. Automation vs. SDET