Test Automation in Software Quality Assurance Training Course

Professional Development Training Course Outline

Category	Quality Assurance and ISO standards	**Duration**	10 Days
Base Fee	$3,000 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

In today?ÇÖs digital landscape, delivering high-quality software products is no longer optional but a core business requirement. Test automation in software quality assurance Training Course is a game-changing approach that reduces testing time, enhances accuracy, and improves overall efficiency in the software development lifecycle. With the increasing demand for rapid releases and continuous integration, automation testing has become one of the most trending and sought-after skills in the technology sector. This training course provides participants with in-depth knowledge and hands-on exposure to tools, frameworks, and best practices for implementing automation in quality assurance.

The course emphasizes real-world applications, practical case studies, and the integration of trending technologies such as Agile, DevOps, Selenium, and AI-powered automation. Participants will develop the expertise to design, execute, and manage automated test cases across different environments, ensuring high-performing and bug-free applications. With SEO-friendly content and relevant industry insights, this training serves as a stepping stone for professionals aiming to strengthen their skills in software testing and automation while contributing to organizational excellence.

Programme Curriculum

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Course Objectives

1. Understand the fundamentals of software quality assurance and automation testing.
2. Explore trending automation frameworks such as Selenium, Cypress, and Playwright.
3. Learn the integration of test automation with Agile and DevOps pipelines.
4. Master test scripting, execution, and maintenance of automated test suites.
5. Analyze performance testing, load testing, and scalability testing with tools.
6. Apply AI and machine learning in modern test automation strategies.
7. Gain practical exposure to cross-browser and cross-platform automation testing.
8. Implement continuous integration and continuous delivery (CI/CD) with test automation.
9. Evaluate automation ROI and cost-benefit analysis for organizations.
10. Understand test data management and automation challenges.
11. Develop strategies for mobile application automation testing.
12. Apply security automation testing for web and mobile applications.
13. Engage in real-world case studies for end-to-end test automation frameworks.

Organizational Benefits

1. Reduced testing time and faster release cycles.
2. Improved accuracy with automated test execution.
3. Enhanced collaboration between QA, development, and operations teams.
4. Higher scalability and adaptability to changing business needs.
5. Reduction in overall testing costs.
6. Increased customer satisfaction through reliable software delivery.
7. Minimized human error in repetitive test processes.
8. Continuous improvement in product quality.
9. Stronger alignment with Agile and DevOps practices.
10. Competitive advantage in delivering robust applications.

Target Audiences

1. Software Test Engineers
2. Quality Assurance Analysts
3. Test Automation Engineers
4. DevOps Professionals
5. Agile Team Members
6. Software Developers
7. IT Project Managers
8. Business Analysts

Course Duration: 10 days

Course Modules

Module 1: Introduction to Software Quality Assurance and Test Automation

- Overview of software quality assurance principles
- Importance of automation testing in modern SDLC
- Manual testing vs. automated testing comparison
- Key industry trends in automation testing
- Test automation tools landscape
- Case study: Transition from manual to automated testing

Module 2: Test Automation Frameworks

- Understanding framework architecture
- Types of frameworks: modular, data-driven, keyword-driven, hybrid
- Benefits of using automation frameworks
- Design considerations for reusable test components
- Open-source vs. commercial frameworks
- Case study: Implementing hybrid test automation framework

Module 3: Selenium for Web Automation

- Introduction to Selenium WebDriver
- Locators and interacting with web elements
- Writing and executing test scripts
- Managing dynamic web elements
- Limitations and best practices with Selenium
- Case study: Automating a web-based e-commerce platform

Module 4: Advanced Test Automation Tools

- Cypress and Playwright overview
- Features and advantages over traditional tools
- End-to-end testing with modern frameworks
- API automation with Postman and REST Assured
- Tool comparison for enterprise environments
- Case study: Cypress automation in Agile projects

Module 5: Test Automation in Agile and DevOps

- Role of test automation in Agile methodology
- Continuous integration and continuous testing
- Integrating automation in DevOps pipelines
- Popular CI/CD tools: Jenkins, GitLab CI, Azure DevOps
- Benefits of automation in release management
- Case study: DevOps-enabled test automation

Module 6: Test Scripting and Execution

- Principles of test script design

- Script reusability and maintainability
- Execution strategies for automation suites
- Parallel execution and distributed testing
- Error handling and debugging in automation scripts
- Case study: Optimizing test execution time

Module 7: Performance and Load Testing Automation

- Introduction to performance and load testing
- Tools: JMeter, LoadRunner, Gatling
- Automating performance scenarios
- Analyzing performance test results
- Performance bottlenecks identification
- Case study: Load testing a high-traffic banking application

Module 8: AI and Machine Learning in Automation

- AI trends in test automation
- Predictive analytics for test case selection
- Self-healing automation scripts
- Natural language processing for test creation
- AI-powered test maintenance
- Case study: AI-driven test automation in fintech

Module 9: Cross-Browser and Cross-Platform Testing

- Importance of compatibility testing
- Cloud-based platforms: BrowserStack, Sauce Labs
- Automating tests across multiple environments
- Challenges of device fragmentation
- Reporting in cross-platform automation
- Case study: Mobile and web compatibility testing

Module 10: Mobile Application Automation

- Tools for mobile automation: Appium, Espresso, XCUITest
- Setting up test environments for mobile apps
- Writing and executing mobile test scripts
- Hybrid and native app testing
- Mobile device cloud usage
- Case study: Appium automation for a retail application

Module 11: Security Automation Testing

- Importance of security testing in SDLC
- Automated vulnerability scanning tools
- Integrating security into CI/CD pipelines
- Automating OWASP Top 10 security checks
- Limitations of security automation
- Case study: Security automation in healthcare applications

Module 12: Test Data Management

- Role of test data in automation testing
- Strategies for test data generation
- Automating test data provisioning
- Data-driven testing approaches
- Challenges with sensitive data handling
- Case study: Automated test data creation in enterprise systems

Module 13: Automation ROI and Metrics

- Importance of ROI in test automation projects
- Metrics for evaluating automation success
- Cost-benefit analysis of automation initiatives
- Challenges in calculating ROI
- Reporting automation metrics to stakeholders
- Case study: Measuring ROI in large-scale test automation

Module 14: Automation Challenges and Solutions

- Common challenges in test automation
- Strategies for overcoming automation failures
- Team collaboration in automation projects
- Handling flaky tests and false positives
- Long-term maintenance considerations
- Case study: Resolving automation challenges in telecom projects

Module 15: Real-World Case Studies in Test Automation

- Review of multiple real-world projects
- Success factors for automation adoption
- Lessons learned from automation implementation
- Future trends in automation
- Organizational transformation with automation
- Case study: Enterprise-wide test automation adoption

Training Methodology

- Interactive instructor-led sessions
- Hands-on exercises with real-world tools
- Group discussions and collaborative learning
- Practical case studies and role-based scenarios
- Assignments and assessments for skill evaluation
- Continuous feedback and mentoring support

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org or call *+254769199797*

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
23 Nov 2026	04 Dec 2026	Online	$2,000
23 Nov 2026	04 Dec 2026	Physical	$3,000
23 Nov 2026	04 Dec 2026	Physical	$6,000
23 Nov 2026	04 Dec 2026	Physical	$6,000
23 Nov 2026	04 Dec 2026	Physical	$12,000
23 Nov 2026	04 Dec 2026	Physical	$9,000
23 Nov 2026	04 Dec 2026	Physical	$12,000
23 Nov 2026	04 Dec 2026	Physical	$12,000

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