API Testing and Automation Training Course

Professional Development Training Course Outline

Category	Quality Assurance and ISO standards	**Duration**	5 Days
Base Fee	$1,500 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

API Testing and Automation Training Course has become a cornerstone in modern software development and quality assurance practices. As organizations continue to adopt DevOps, Agile methodologies, and cloud-native architectures, the demand for skilled professionals in API testing and automation is at an all-time high. This course introduces learners to REST API testing, automation frameworks, continuous integration, and real-time use cases, ensuring industry-relevant practical skills. With an emphasis on automation tools, integration pipelines, and testing strategies, participants will gain confidence in building robust API testing solutions.

By focusing on trending technologies, this course prepares learners to master API automation with tools like Postman, REST Assured, SoapUI, and advanced CI/CD integrations. Participants will explore real-life case studies, hands-on exercises, and project-driven learning experiences. This approach ensures a comprehensive understanding of both manual and automated API testing, making the course suitable for developers, QA engineers, test analysts, and automation specialists seeking to boost their career with in-demand expertise.

Programme Curriculum

API Testing and Automation Training Course

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Course Objectives

1. Understand fundamentals of API Testing and Automation in modern SDLC.
2. Gain expertise in REST API and SOAP API testing techniques.
3. Learn automation frameworks including Postman, REST Assured, and SoapUI.
4. Implement API test cases for functional and non-functional requirements.
5. Master scripting and validations for JSON and XML responses.
6. Integrate API tests into CI/CD pipelines for continuous delivery.
7. Explore security, performance, and scalability aspects of API testing.
8. Apply data-driven and keyword-driven testing approaches in automation.
9. Develop reusable automated scripts for enterprise projects.
10. Analyze real-world case studies in API test automation.
11. Perform advanced debugging, reporting, and result analysis.
12. Gain hands-on knowledge of automation best practices and tools.
13. Prepare for industry-level projects and certification readiness.

Organizational Benefits

1. Accelerated software delivery with automated API testing.
2. Enhanced product quality through reliable test automation.
3. Reduced testing costs by implementing reusable test scripts.
4. Improved collaboration between QA, DevOps, and development teams.
5. Faster defect detection across API layers.
6. Seamless CI/CD pipeline integration.
7. Scalable and maintainable test automation frameworks.
8. Increased customer satisfaction due to higher product reliability.
9. Better risk management in production environments.
10. Competitive advantage by adopting trending automation practices.

Target Audiences

1. Software Test Engineers
2. Quality Assurance Professionals
3. Developers working on APIs
4. DevOps Engineers
5. Test Automation Specialists
6. Technical Leads and Managers
7. IT Professionals seeking upskilling
8. Students and fresh graduates in IT fields

Course Duration: 5 days

Course Modules

Module 1: Introduction to API Testing

- Understanding APIs in software architecture
- REST vs SOAP APIs overview
- Manual API testing basics
- HTTP methods and status codes explained
- Tools used for API testing introduction
- Case Study: Basic API test lifecycle implementation

Module 2: Postman for API Testing

- Installing and configuring Postman
- Creating and managing collections
- Writing assertions with Postman scripts
- Parameterization and environment variables
- Automated test runs in Postman
- Case Study: Functional testing with Postman collections

Module 3: REST Assured Framework

- Introduction to REST Assured and setup
- Writing Java-based REST Assured scripts
- Validating JSON and XML responses
- Integrating REST Assured with Maven and TestNG
- Advanced request/response handling
- Case Study: End-to-end automation using REST Assured

Module 4: SoapUI for SOAP and REST Services

- Installing SoapUI and workspace setup
- Creating SOAP and REST projects
- Assertions and validations in SoapUI
- Data-driven testing with SoapUI Pro features
- Load and performance testing with SoapUI
- Case Study: Enterprise-grade SOAP API testing

Module 5: API Automation Frameworks

- Designing reusable frameworks
- Keyword-driven and data-driven approaches
- Reusability and maintainability concepts
- Common libraries and utilities for frameworks
- Best practices for framework scalability
- Case Study: Designing a hybrid framework for APIs

Module 6: API Testing in CI/CD Pipelines

- Integrating API tests with Jenkins
- Triggering test execution in pipelines
- Reporting and notifications in CI/CD
- Git integration and version control for tests
- Automating regression suites in pipelines

- Case Study: API testing in a DevOps pipeline

Module 7: Security and Performance Testing

- Authentication and authorization in APIs
- OAuth, JWT, and token-based security tests
- Performance testing with JMeter for APIs
- Identifying vulnerabilities in APIs
- Load and stress testing techniques
- Case Study: API performance optimization project

Module 8: Real-World Case Studies and Best Practices

- Case study on enterprise REST APIs
- Lessons from failed automation projects
- Advanced reporting and dashboards
- Scaling automation for microservices
- Future trends in API testing and automation
- Case Study: Complete industry scenario with automation tools

Training Methodology

- Instructor-led interactive sessions
- Hands-on exercises and labs
- Real-world project simulations
- Case study discussions and group tasks
- Continuous assessments and feedback

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	27 Nov 2026	Online	$1,000
23 Nov 2026	27 Nov 2026	Physical	$1,500
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$4,500
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$6,000

Ready to enroll or request a customized program? Book online or contact us:

Register Online Now

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