ISTQB Certified Tester Advanced Level - Test Automation Engineer (CT-TAE) Course

Course Duration: 24 Hrs. **Course Code: API-TC-01**

Course Overview

The **ISTQB Certified Tester Advanced Level – Test Automation Engineer (CT-TAE)** course is designed for experienced software testers and QA engineers who want to develop expertise in designing, implementing, and maintaining automated testing solutions. This advanced course focuses on test automation strategies, frameworks, tools, and best practices to improve efficiency, reliability, and scalability of test processes. It prepares participants to handle complex automation projects and equips them for the ISTQB CT-TAE certification exam.

What You'll Learn?

By completing this course, you will be able to:

- Develop a robust test automation strategy aligned with business goals
- Design and implement maintainable test automation frameworks
- Integrate test automation with CI/CD pipelines
- Select the right tools and technologies for automation
- Automate functional, non-functional, and regression testing
- Monitor and maintain automation solutions effectively
- Apply best practices to maximize ROI of automation initiative.

Target Audience

This course is ideal for:

- Test Automation Engineers and Senior QA Engineers
- SDETs (Software Development Engineers in Test)
- Test Leads and QA Managers responsible for automation
- Software Developers involved in automated testing
- Testing professionals seeking advanced-level ISTQB certification

Pre-Requisites

Participants should have:

- ISTQB Certified Tester Foundation Level (CTFL) certification
- Practical experience in software testing and automation
- Basic knowledge of programming and automation tools
- Familiarity with agile or DevOps environments

Course Content

Module 1: Test Automation Fundamentals

- Role and benefits of test automation
- Test automation principles and strategies
- Identifying automation opportunities

Module 2: Test Automation Architecture and Frameworks

- Framework design patterns and best practices
- Modular, data-driven, keyword-driven, and hybrid frameworks
- Scalability, maintainability, and reusability considerations

Module 3: Test Automation Tools and Technologies

- Overview of popular tools for UI, API, and mobile automation

- Open-source vs. commercial tools
- Tool evaluation and selection criteria

Module 4: Integration with CI/CD Pipelines

- Continuous integration and continuous testing concepts
- Automating test execution and reporting
- Managing test environments and test data

Module 5: Non-Functional and Specialized Automation

- Performance, load, and security testing automation
- Test automation for web, mobile, and API systems
- AI/ML-assisted testing overview

Module 6: Governance, Metrics, and Best Practices

- Measuring automation effectiveness and ROI
- Maintaining and evolving automation frameworks
- Industry best practices and continuous improvement

y completing this course, you will be able to:

- Understand what APIs are and their role in software systems
- Perform functional, integration, performance, and security testing of APIs
- Use popular API testing tools like Postman, SoapUI, or REST-assured
- Automate API tests and integrate them into CI/CD pipelines
- Validate responses, error codes, and data formats
- Understand best practices and challenges in API testing

Target Audience

This course is ideal for:

- Manual and automation testers
- QA engineers and test analysts
- Software developers and SDETs
- DevOps engineers involved in testing pipelines
- Professionals seeking expertise in API validation and testing

Pre-Requisites

Participants should have:

- Basic knowledge of software testing fundamentals
- Understanding of HTTP, JSON, XML, and web services concepts
- Familiarity with REST and SOAP APIs is beneficial
- Some programming knowledge (for automation) is recommended but not mandatory

Course Content

Module 1: Introduction to API Testing

- What is an API and how it works
- Types of APIs: REST, SOAP, GraphQL
- Importance of API testing in modern applications

Module 2: Functional API Testing

- Validating endpoints and HTTP methods
- Checking request and response structures

- Status codes and error handling

Module 3: Tools for API Testing

- Postman, SoapUI, and REST-assured overview
- Test execution, collections, and scripts
- Automating API tests

Module 4: API Test Automation

- Writing automated tests using REST-assured or other tools
- Integration with CI/CD pipelines
- Parameterization and data-driven testing

Module 5: Non-Functional API Testing

- Performance and load testing of APIs
- Security testing and authentication
- Reliability and scalability testing

Module 6: Best Practices and Real-World Scenarios

- API versioning and backward compatibility
- Handling dependencies and mocking services
- Reporting and defect management