



ISTQB® Certified Tester Advanced Level – Test Automation Engineer

COURSE INFORMATION

Contents

Summary	1
Course Objectives.....	1
Who will benefit?	1
Prerequisites.....	1
Skills to be Gained	2
The Certification Exam.....	3
Course Content (Overview)	3

Summary

This 3-day course explains the tasks of a test automation engineer (TAE) in designing, developing, and maintaining test automation solutions. The course is accredited by the ISTQB® and leads to the ISTQB Advanced Test Automation Engineer Certificate.

Our training includes exercises and practice exam questions to highlight key aspects of the syllabus, to help participants understand and practice the concepts and methods presented and to prepare them for the certification exam.

Course Objectives

This course aims to provide participants with the knowledge and skills necessary to guide a test automation project. It focuses on the concepts, methods, tools and processes for automating dynamic functional tests and the relationship of those tests to test management, configuration management, defect management, software development processes and quality assurance.

The methods described are generally applicable across variety of software lifecycle approaches (e.g., agile, sequential, incremental, iterative), types of software systems (e.g., embedded, distributed, mobile) and test types (functional and non-functional testing).

Who will benefit?

Advanced level courses are suitable for anyone who is interested in progressing an established career in software testing. This includes people in roles such as testers, test analysts, test engineers, test consultants, test team leads, test managers, user acceptance testers and software developers. They may also be of interest to anyone who wants a deeper than Foundation level understanding of software testing, such as project managers, quality managers, software development managers, business analysts, IT directors and management consultants.

This ISTQB Advanced Test Automation Engineer certification course is aimed at professionals who are working within a tool supported software testing environment. It is also suitable for professionals who are planning to start working within a tool supported software testing environment in the future, or are working within companies that plan to do so.

People possessing an ISTQB Advanced Test Automation Engineer certificate may use the Certified Tester Advanced Level acronym: CTAL-TAE.

Prerequisites

In order to take an ISTQB Advanced level certification exam, it is necessary to already have the CTFL certificate and to “satisfy the Exam Board which examines

them that they have sufficient practical experience to be considered Advanced Level qualified“.

The CTFL certificate is not a pre-requisite for attending this training course. It is, however, essential that attendees have either obtained it or, at least, have undergone an ISTQB-accredited Foundation level training course. It is further recommended that delegates also have:

- at least one year's practical experience of software testing;
- at least a theoretical understanding and preferably some practical experience of basic programming.

Skills to be Gained

A candidate who achieves ISTQB Advanced Test Automation Engineer certification can be expected to:

- Contribute to the development of a plan to integrate automated testing within the testing process.
- Evaluate tools and technology for automation best fit to each project and organization.
- Create an approach and methodology for building a test automation architecture (TAA).
- Design and develop (new or modified) test automation solutions that meet the business needs.
- Enable the transition of testing from a manual to an automated approach.
- Create automated test reporting and metrics collection.
- Manage and optimize testing assets to facilitate maintainability and address evolving (test) systems.
- Explain the objectives, advantages, disadvantages, and limitations of test automation.
- Identify technical success factors of a test automation project.
- Analyse a system under test to determine the appropriate automation solution.
- Analyse test automation tools for a given project and report technical findings and recommendations.
- Understand "design for testability" and "design for test automation" methods applicable to the SUT.
- Explain the structure of the Generic Test Automation Architecture.
- Analyse factors of implementation, use, and maintenance requirements for a given Test Automation Solution.
- Explain the factors to be considered when identifying reusability of components.
- Apply guidelines that support effective test tool pilot and deployment activities.

- Analyse deployment risks and identify technical issues that could lead to failure of the test automation project, and plan mitigation strategies.
- Understand which factors support and affect maintainability.
- Classify metrics that can be used to monitor the test automation strategy and effectiveness.
- Explain how a test execution report is constructed and published.
- Apply criteria for determining the suitability of tests for automation.
- Understand the factors in transitioning from manual to automation testing.
- Explain the factors to consider in implementing automated regression testing, new feature testing, and confirmation testing.
- Verify the correctness of an automated test environment including test tool setup.
- Verify the correct behaviour for a given automated test script and/or test suite.
- Analyse the technical aspects of a deployed test automation solution and provide recommendations for improvement.

The Certification Exam

The Certificate is awarded to those who pass a written 90-minute multiple-choice exam of 40 questions that is set, moderated, marked and invigilated by an ISTQB licensed Exam Provider. Candidates whose native language is not English get an extra 25% time allowance.

The exam will be arranged separately on a later date. Tesena, in common with other training providers, recommends that Advanced Level exams be taken approximately 1 – 2 weeks after the course in order to allow adequate preparation time.

Course Content (Overview)

Chapter 1: Introduction and Objectives for Test Automation

- Purpose of Test Automation
- Success Factors in Test Automation

Chapter 2: Preparing for Test Automation

- SUT Factors Influencing Test Automation
- Tool Evaluation and Selection
- Design for Testability and Automation

Chapter 3: The Generic Test Automation Architecture

- Introduction to gTAA
- TAA Design
- TAS Development

Chapter 4: Deployment Risks and Contingencies

- Selection of Test Automation Approach and Planning of Deployment/Rollout
- Risk Assessment and Mitigation Strategies
- Test Automation Maintenance

Chapter 5: Test Automation Reporting and Metrics

- Selection of TAS Metrics
- Implementation of Measurement
- Logging of the TAS and the SUT
- Test Automation Reporting

Chapter 6: Transitioning Manual Testing to an Automated Environment

- Criteria for Automation
- Identify Steps Needed to Implement Automation within Regression Testing
- Factors to Consider when Implementing Automation within New Feature Testing
- Factors to Consider when Implementing Automation of Confirmation Testing

Chapter 7: Verifying the TAS

- Verifying Automated Test Environment Components
- Verifying the Automated Test Suite

Chapter 8: Continuous Improvement

- Options for Improving Test Automation
- Planning the Implementation of Test Automation Improvement

Acknowledgement:- Much of the above content has been taken or adapted from the ISTQB® Advanced Technical Test Analyst overview document.