

## Advanced Level Test Automation Engineering—ISTQB SOFTWARE Testing Certification Training

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### Course Summary

#### Description

This course provides participants with the knowledge and skills necessary to guide a test automation project. The course 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.

Methods described are generally applicable across a 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).

#### Objectives

By the end of this course, students will be able 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.

#### Topics

- Introduction and Objectives for Test Automation
- Preparing for Test Automation
- The Generic Test Automation Architecture
- Deployment Risks and Contingencies
- Test Automation Reporting and Metrics
- Transitioning Manual Testing to an Automated Environment
- Verifying the TAS
- Continuous Improvement

#### Audience

The target audience for this course includes:

- Testers
- Test analysts
- Test engineers
- Test consultants
- Test managers
- Software developers
- Anyone wishing to gain the ISTQB Advanced Test Automation Engineer certificate

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### Course Summary (cont.)

#### Audience (cont.)

- Appropriate for anyone who wants a deeper understanding of software test automation, such as project managers, quality managers, software development managers, business analysts, IT directors, and management consultants

The certification is aimed at professionals who are working within a tool supported software testing environment. It is also 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.

#### Prerequisite

- You must have obtained an ISTQB Foundation Level Certification (CTFL) to be eligible for Advanced Level Certification and have 3 years of experience.
- Prior to attending class please download and review the following document: [Advanced Level Test Automation Engineer Syllabus](#)

#### Duration

Three Days

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### Course Outline

- I. **Introduction and Objectives for Test Automation**
  - A. Purpose of Test Automation
  - B. Success Factors in Test Automation
- II. **Preparing for Test Automation**
  - A. SUT Factors Influencing Test Automation
  - B. Tool Evaluation and Selection
  - C. Design for Testability and Automation
- III. **The Generic Test Automation Architecture**
  - A. Introduction to gTAA
    1. Overview of the gTAA
    2. Test Generation Layer
    3. Test Definition Layer
    4. Test Execution Layer
    5. Test Adaptation Layer
    6. Configuration Management of a TAS
    7. Project Management of a TAS
    8. TAS Support for Test Management
  - B. TAA Design
    1. Introduction to TAA Design
    2. Approaches for Automating Test Cases
    3. Technical considerations of the SUT
    4. Considerations for Development/QA Processes
  - C. TAS Development
    1. Introduction to TAS Development
    2. Compatibility between the TAS and the SUT
    3. Synchronization between TAS and SUT
    4. Building Reuse into the TAS
    5. Support for a Variety of Target Systems
- IV. **Deployment Risks and Contingencies**
  - A. Selection of Test Automation Approach and Planning of Deployment/Rollout
    1. Pilot Project
    2. Deployment
    3. Deployment of the TAS Within the Software Lifecycle
  - B. Risk Assessment and Mitigation Strategies
  - C. Test Automation Maintenance
    1. Types of Maintenance
    2. Scope and Approach
- V. **Test Automation Reporting and Metrics**
  - A. Selection of TAS Metrics
  - B. Implementation of Measurement
  - C. Logging of the TAS and the SUT
  - D. Test Automation Reporting
- VI. **Transitioning Manual Testing to an Automated Environment**
  - A. Criteria for Automation
  - B. Identify Steps Needed to Implement Automation within Regression Testing
  - C. Factors to Consider when Implementing Automation within New Feature Testing
  - D. Factors to Consider when Implementing Automation of Confirmation Testing
- VII. **Verifying the TAS**
  - A. Verifying Automated Test Environment Components
  - B. Verifying the Automated Test Suite
- VIII. **Continuous Improvement**
  - A. Options for Improving Test Automation
  - B. Planning the Implementation of Test Automation Improvement