

# ISTQB Certified Tester Advanced Level (CTAL) Technical Test Analyst

Course code: ISTQBATTA

This three-day course will be suitable for professionals in the field of software testing who want to become highly skilled technical testers.

## Who is the course for

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.

The Advanced Technical Test Analyst course is particularly aimed at testers whose role involves working with code or with the developers who write it, either to assist in the testing of safety-critical / business-critical code or to create test automation scripts, or who need to perform the more technical types of testing such as performance, security, reliability, portability and maintainability testing.

## What we teach you

The newly revised and updated version of this 3-day training course focuses on the technical testing issues associated with safety-critical / business-critical software systems and on the performance, security, reliability, portability and maintainability testing of all software systems. It covers structure-based and analytical test techniques, technical reviews and concepts of test tools and test automation.

The course is accredited by the ISTQB® and addresses the 2019 version of its Technical Test Analyst syllabus.

Attendees will benefit from thorough preparation for the associated ISTQB certification exam. Our training includes exercises and practice exams that highlight key aspects of the syllabus and help participants to understand and practice the concepts and methods presented.

## Key Improvements in the 2020 "TTA" course

Its objective is to provide an understanding of technical testing issues that goes considerably beyond the ISTQB Foundation Level. In support of that, the new version of this training improves on the earlier one in the following main ways.

- More focus on Statement and Decision testing as the basics of code-level structural testing, to compensate for the reduced time spent on these in the latest Foundation course.
- Removal of two structural techniques that are rarely useful (Condition and Decision Condition testing).
- Stronger and more modern treatment of the code-level structural test techniques that are most useful for critical system components (MC/DC, Multiple Condition and Path testing).

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- Continued emphasis on static and dynamic analysis of code and system architecture as ways
- to minimise costs of maintenance and the overall costs of systems ownership.
- Security, Performance Efficiency, Maintainability and Portability testing topics have been
- updated with the latest techniques and international standards.
- The Test Tools and Automation section has been updated and modernised, including more
- detailed treatment of the various approaches to automation and the addition of tools to
- support mobile application testing.

## Skills to be Gained

A candidate who achieves ISTQB Advanced Technical Test Analyst certification can be expected to:

- Recognize and classify the typical risks associated with the security, reliability, performance
- efficiency, maintainability, portability and compatibility of software systems.
- Create test plans detailing the planning, design and execution of tests for mitigating security,
- reliability, performance efficiency, maintainability, portability and compatibility risks.
- Select and apply appropriate structure-based techniques to achieve defined coverage criteria
- based on code and design.
- Effectively participate in technical reviews with developers and software architects, applying
- knowledge of typical mistakes made in code and architecture.
- Use static analysis to suggest improvements to the security, maintainability and testability of
- code.
- Recognize risks in code and software architecture and use dynamic analysis to mitigate those
- risks.
- Outline the costs and benefits expected from introducing particular types of test automation.
- Select appropriate tools to automate technical testing tasks.
- Understand the technical issues and concepts in applying test automation

## Required skills

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.

## The Certification Exam (it is not included in the price)

### The Certification Exam

The Certificate is awarded to those who pass a written two-hour multiple-choice exam of 45 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.

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## Course outline

### Chapter 1: The Technical TA's Tasks in Risk-Based Testing

- How to identify, assess and mitigate technical risks.

### Chapter 2: White-Box Test Techniques

- Statement Testing, Decision Testing, Modified Condition/Decision Testing, Multiple Condition Testing,
- Basis Path Testing and API Testing.
- How to choose the most appropriate of these structural test techniques according to situational context.

### Chapter 3: Analytical Techniques

- Application of static analysis to detect potential security, maintainability and testability defects in code.
- Use of dynamic analysis to mitigate risks in code and software architecture.

### Chapter 4: Quality Characteristics for Technical Testing

- How to design high-level test cases for the non-functional quality characteristics of security, reliability, performance efficiency, maintainability, portability and compatibility.
- How to support the Test Manager in creating test strategies to mitigate the identified risks.

### Chapter 5: Reviews

- How a TTA can give the most value when participating in reviews.
- Use of checklists to identify defects in code and architecture.

### Chapter 6: Test Tools and Automation

- Focuses on the tools and automation issues that are relevant to Technical Test Analysts.
- Covers several types of tool including those used for fault seeding and fault injection, performance efficiency testing, web-based testing, model-based testing, component testing, the build process, and mobile application testing.
- Considers the TTA's role in delivering test automation, the various approaches that can be taken and the factors that should be considered when choosing the approach.

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