

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



- Understand the complexities of testing internal code constructs
- Create efficient and effective test cases to cover complex decisions
- Improve the focus and power of the test cases you create
- Focus on multiple aspects related to the “internals” of your system where many defects hide
- Identify key technical characteristics of the system that require testing including: maintainability, analyzability, changeability, stability, portability and testability
- Understand the use of reviews and tools with the technical testing domain

The ISTQB® Advanced Tester Certification—Technical Test Analyst (TTA) training course expands on the test techniques and methods introduced in the ISTQB Foundation certification course. This three-day course covers six main areas that fall within the area of responsibility of the Technical Test Analyst, risk-based testing, structure-based testing, analytical techniques, quality characteristics for technical testing, reviews, and test tools and automation.

This course includes extensive hands-on exercises so that you can practice and master the methods and techniques covered in the course.

## Who Should Attend?

- Individuals who have taken the ISTQB Certified Tester—Foundation Level training and wish to expand their knowledge and skills into more advanced areas
- Individuals who have received the ISTQB Foundation Level certification, have met the criteria for taking the advanced certification exams, and wish to prepare for those exams.
- Anyone wishing to learn more about advanced testing topics

## ISTQB® Certification & Exam

The International Software Testing Qualifications Board (ISTQB) is the world's most widely-recognized certification of software testing skills and knowledge. Founded in 2002, the ISTQB is a not-for-profit association that has issued more than 750,000 certifications in 129 countries around the globe. The ISTQB Software Tester Certification—Foundation Level (CTFL) is a prerequisite for the ISTQB Certified Tester Advanced Level Technical Test Analyst (CTAL-TTA) exam. In order to be eligible to take any of the Certified Tester—Advanced Level (CTAL) exams, potential examinees must submit proof of Certified Tester—Foundation Level (CTFL) certification.

For private and team training, the ISTQB Advanced Level Technical Test Analyst (CTAL-TTA) exam fee can be included in the course price upon request.

Please reach out to client support with any questions [clientsupport@coveros.com](mailto:clientsupport@coveros.com) [1].

## Course Outline

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### TTA's Tasks in risk-based testing

Risk Management Activities – Revisited  
Risk Identification, assessment and mitigation

### Structure-based testing

Control Flow Analysis Control Flow Concepts – Revisited  
Condition Testing  
Recognizing Conditions in Decisions  
Condition Testing – Issues

### Quality characteristics for technical testing

Quality Characteristics – responsibility, requirements and issues  
General Planning Issues  
Stakeholder Requirements  
Required Tool Acquisition and Training  
Test Environment Requirements  
Organizational Considerations

Decision Condition Testing  
Decision Condition Testing – Issues  
Modified Condition/Decision Coverage (MC/DC)  
MC/DC – Usage and reasoning  
MC/DC – Rules and coupled terms  
Multiple Condition Testing  
Multiple Condition Coverage - recognizing Multiple Conditions  
Multiple Condition Coverage – Issues  
Path Testing  
Understanding Path Coverage  
Formal Path Testing - Cyclomatic Complexity  
API (Application Programming Interface)  
API Testing  
API Testing – Coverage and defects  
Selecting a Structure-Based Technique

### **Analytical Techniques**

Data Flow Analysis  
Data Flow – Define-Use Technique  
Define-Use Pairings – Common Pairings  
General Data Flow – Common Anomalies  
Improving Maintainability  
Improving Maintainability – Tools  
Call Graphs  
Call Graphs – Usage and Application  
Integration Testing – Methods  
Pairwise Integration Testing  
Neighborhood Integration Testing  
McCabe's Design Predicate Approach  
Dynamic Analysis  
Dynamic Analysis – Applicability and tools  
Dynamic Analysis – Application  
Detecting Memory Leaks  
Detecting Wild Pointers  
Wild Pointers – tools and issues  
Analysis of Performance

Data Security Considerations  
Security Testing – Potential Threats  
Security Test Planning – Concepts  
Security Test Specification  
Security Testing – Static Analysis  
Reliability Testing  
Measuring Software Maturity  
Tests for Fault Tolerance  
Recoverability Testing  
Reliability Test Planning  
Performance Testing  
Load Testing  
Stress Testing  
Scalability Testing  
Performance Test Planning  
Resource Utilization  
Maintainability Testing  
Analyzability, Changeability, Stability, and Testability  
Portability Testing  
Installability, co-existence/compatibility, adaptability, replaceability

### **Reviews**

Using Checklists in Reviews  
Architectural Reviews  
Code Reviews

### **Test tools and automation**

Integration and Information Interchange  
Defining the Test Automation Project  
Technical Test Analyst – Key Activities  
Selecting the Automation Approach  
Data-Driven Approach  
Keyword-Driven Approach  
Test Automation – Initialization  
Test Automation – Handling Errors  
Modeling Business Processes  
A Keyword Table – Example  
Keyword Automation – Issues  
Specific Test Tools  
Fault Seeding/Fault Injection Tools  
Performance Testing Tools  
Tools for Web-Based Testing  
Tools to Support Model-Based Testing  
Component Testing and Build Tools