

The ISTQB Advanced Syllabus *Guiding the Way to Better Software Testing*



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ISTQB Advanced Syllabus

- Goals of this presentation
 - Familiarize you with the ISTQB program and certifications in general
 - Explain the Advanced level certification
 - Illustrate the kinds of abilities candidates must demonstrate to gain Advanced certificates
- Topics to cover
 - An overview of the ISTQB program and results so far
 - The structure and origin of the Advanced Syllabus
 - The Advanced Test Manager
 - The Advanced Test Analyst
 - The Advanced Technical Test Analyst



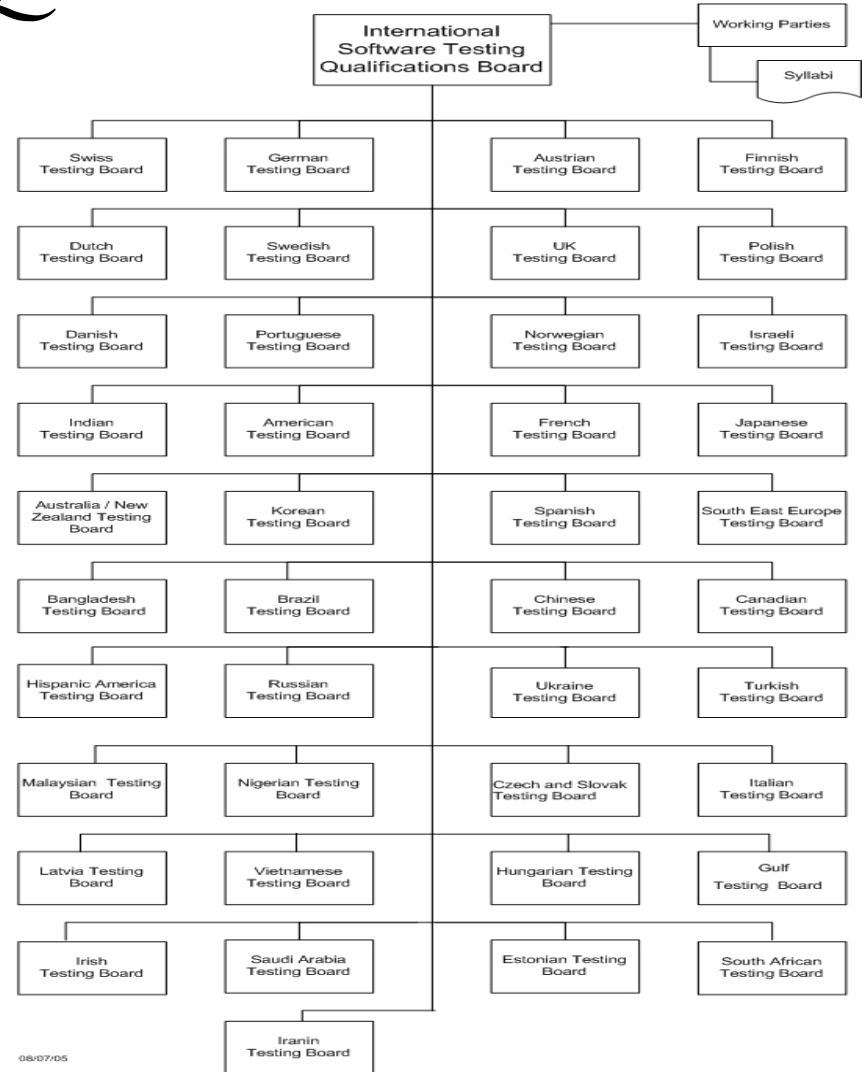
Software Tester Certification

- Tester certification confirms, through objective, carefully-designed exams, the professional capabilities of software testers
- ISTQB's approach
 - ❖ Practical, real-world focused
 - Supports a career path with levels of certification
 - ❖ Promotes the software testing profession
 - ❖ Represents the distilled wisdom of many experts including practitioners, consultants, trainers, and academics
 - ❖ Training is *not required* to take exams
- Last two points in particular distinguish ISTQB's approach from other testing certifications



ISTQB

- Composed of 45+ National Boards, more than doubled in scope in the last four years
- Based in Brussels, Belgium, EU
- A collegial, sharing organization
- Working parties (composed of National Board delegates) define syllabi (bodies of knowledge), glossary, processes, etc.
- These working parties distill the collective experience and wisdom represented across boards (>2,000 person-years)



08/07/05



Foundation Certification

- Entry-level certification: 0+ years of experience
- Goals
 - Ensure a broad understanding of the fundamental best practices and key concepts in software testing
 - Provide a foundation for professional growth
- Syllabus/body of knowledge covers
 - Fundamentals of testing, testing in the software lifecycle, static techniques, white-box and black-box test design, test management, and testing tools
 - Syllabus-based training courses are typically 3-5 days
- Status: Version 2007, an incremental improvement on version 2005, released, with exams and training courses widely available



Advanced Certification

- Mid-level certification: 5+ years experience
- Goals
 - Ensure an understanding of advanced best practices and key concepts in software testing by committed test professionals
 - Support on-going professional growth
- Syllabus/body of knowledge covers
 - Advanced behavioral (black-box) testing for tester analysts, test automation and advanced non-functional testing for technical test analysts, and sophisticated test management concepts
 - Syllabus-based training courses are required to be at least 5 days for each module (three modules total)
- Status: Version 2007, a merge and expansion of the older Practitioner and Advanced syllabi, is released. Exams and accredited training are running against this version now.

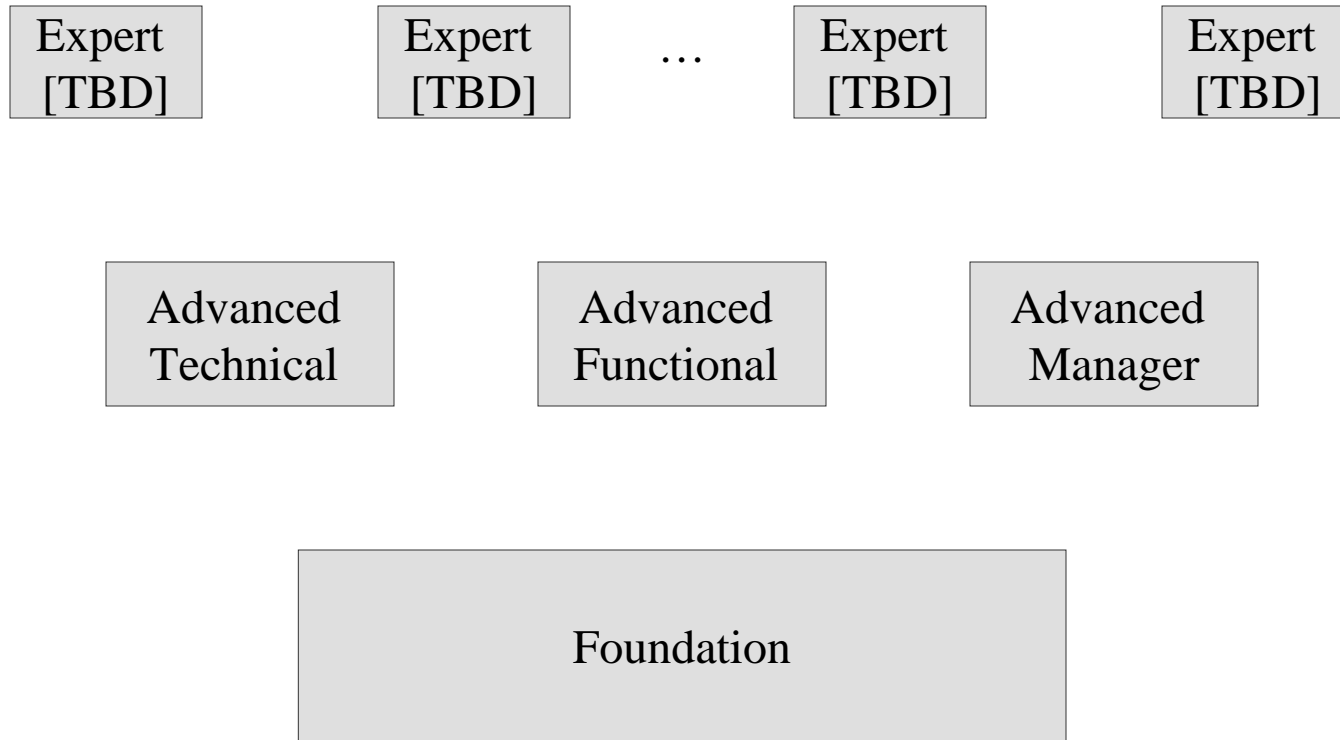


Expert Certification

- Guru-level certification: 8+ years experience
- Goals
 - Ensure consistent understanding and execution of proven cutting-edge techniques by seasoned test professionals
 - Lead the software testing profession
- Syllabi/bodies of knowledge may cover
 - Test process improvement, test automation, test management, and more
 - Syllabus-based training courses will be offered
- Status: A working party is developing new expert syllabi. The Expert Test Manager syllabi and Improving Test Processes syllabi are out this year.



Visualizing the Levels of Certification

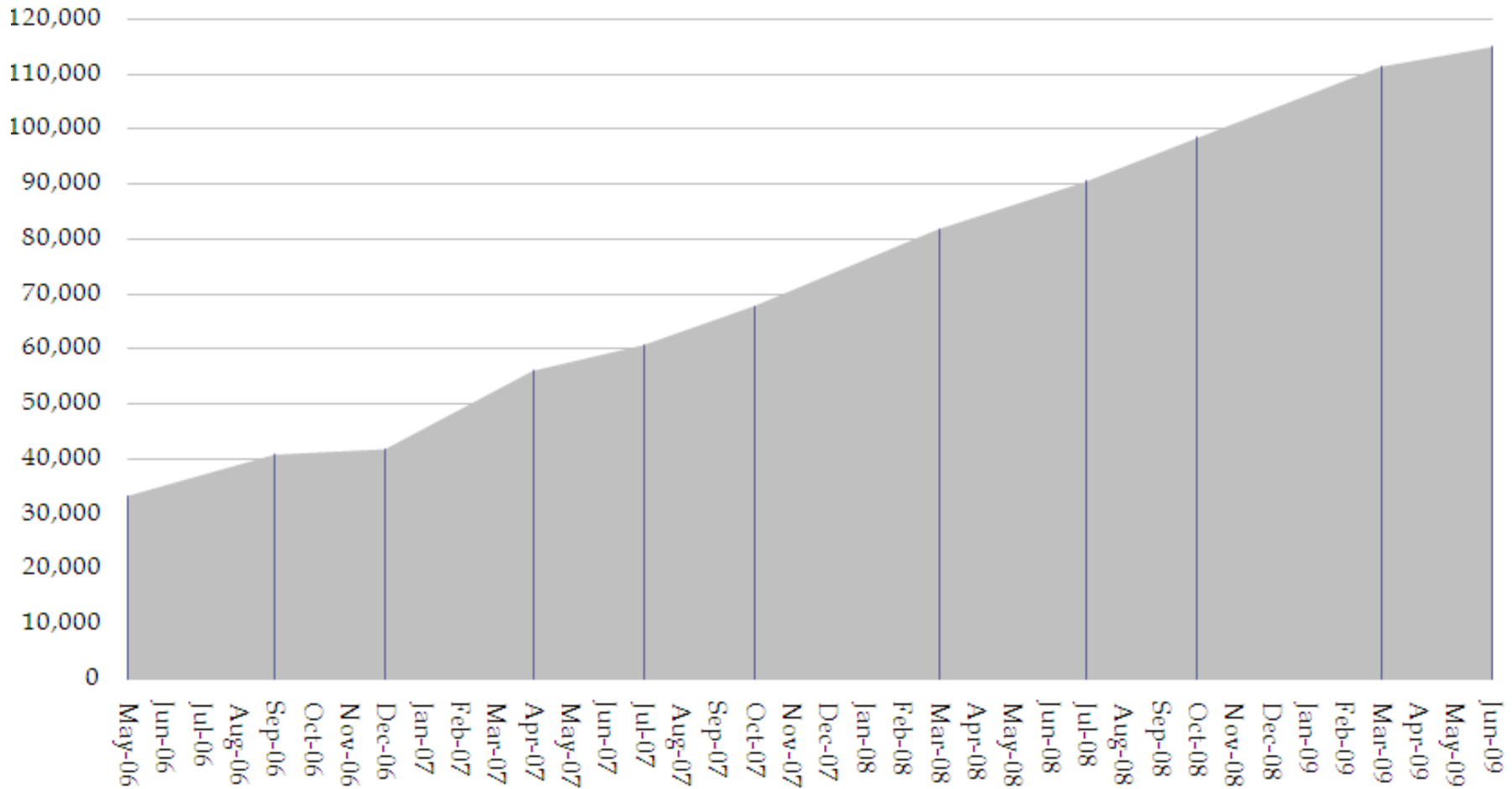


Relative size of figures indicates expected relative numbers of potential certificate holders (not to scale). There will be more than four expert certifications.



ISTQB Certification Growth

Total Certifications



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Value of Certification

- To the tester
 - Demonstrate mastery of the best practices and key concepts in the field
 - Advance career and opportunities in competitive market
- To the organization
 - Ensure better testing for better software and lower costs of poor quality
 - Achieve consistency and re-usability of testing
- To the profession
 - Build on our best work and stop going in circles
 - Define the profession and what professional testers know



An Example of Certification ROI

- One RBCS client ran a Foundation course as a pilot in one of its many offices in the US
- The week after the course, a tester applied a technique he'd learned to reduce the regression test set from 800 test cases to 300
- That is a 60% reduction in regression test effort, which accounts for most of their testing
- This client now requires all new testers to hold the Foundation certificate, and is gradually training its entire staff of testers



ISTQB Advanced Syllabus 2007

- Developed by a team of 15 authors spanning 10 countries
- Sixty-nine primary reviewers spanning nine countries
- Final review and approval by 33 National Boards
- Distills over 2,000 person-years of experience
- The ISTQB and the authors are the source of the syllabus which is used by permission as the basis for all accredited training courses (including RBCS' courses)



Advanced Syllabus Authors

- Graham Bath*+
- Rex Black*+
- Sigrid Eldh+
- Bernard Homès (chair)+
- Jayapradeep Jiothis
- Paul Jorgensen*+
- Vipul Kocher
- Judy McKay*+
- Klaus Olsen
- Randy Rice*+
- Jürgen Richter
- Eric Riou Du Cosquer
- Mike Smith+
- Geoff Thompson (vice chair)*+
- Erik Van Veenendaal*+

* Indicates an author who has also written or edited one or more books on testing.

+ Indicates an author who has 20 or more years of software or systems experience.



Advanced Syllabus: The Ten Chapters

1. Basic aspects of software testing
2. Testing processes
3. Test management
4. Test techniques
5. Testing of software characteristics
6. Reviews
7. Incident (defect) management
8. Standards and test process improvement
9. Test tools and automation
10. People skills (team composition)



Advanced Syllabus by the Numbers

- Number of pages: 114
- Number of learning objectives
 - Test Manager:
 - 64 total
 - 43 K2, 12 K3, 9 K4
 - Test Analyst:
 - 29 total
 - 18 K2, 7 K3, 4 K4
 - Technical Test Analyst:
 - 44 total
 - 25 K2, 11 K3, 8 K4
- Referenced books: 21
- Referenced standards: 7



Learning Objectives

- The Foundation and Advanced exams are based on learning objectives, which state what you should be able to do
- The learning objectives are at four levels of increasing sophistication
 - K1: remember basic facts, techniques, and standards
 - K2: understand the facts, techniques, and standards and how they inter-relate
 - K3: apply facts, techniques, and standards to your projects
 - K4: analyze facts, techniques, and standards, and adapt or select them for your project
- For the Advanced exams, the entire Advanced syllabus is implicitly covered at the K1 level
- Each module (test manager, test analyst, technical test analyst) has its own set of K2, K3, and K4 learning objectives defined against each chapter



Advanced Exam Questions

- The lower levels, K1 and K2, are covered implicitly within higher level questions
- Unlike the Foundation exam, the Advanced exams are heavily focused on K3 and K4 questions
- Many exam questions consider a scenario
 - Scenario described
 - Sequence of questions about scenario asked
 - Simulates real-world use of various advanced testing concepts
- The Foundation syllabus is also examinable
- Cross-section questions, including joining Foundation and Advanced sections, are allowed



Advanced Training Courses

- Must cover all learning objectives defined for the module (test manager, test analyst, or technical test analyst)
- Must be at least five days long (for live, instructor-led courses)
- Must include real-world examples for all K2, K3, and K4 learning objectives
- Must include realistic exercise for all K3 and K4 learning objectives (which must be done in class for live, instructor-led courses)



Training Course Breakdown

Chapter	Test Manager		Test Analyst		Tech Test Analyst	
	Hours	Percent	Hours	Percent	Hours	Percent
Intro	1.0	3%	1.0	3%	1.0	3%
1	2.5	7%	0.5	1%	0.5	1%
2	2.0	6%	3.0	9%	3.0	9%
3	18.7	53%	2.0	6%	2.0	6%
4	0.0	0%	18.0	51%	15.5	44%
5	0.0	0%	3.5	10%	4.0	11%
6	2.0	6%	3.0	9%	3.0	9%
7	1.3	4%	2.0	6%	2.0	6%
8	2.0	6%	0.0	0%	0.0	0%
9	1.5	4%	1.5	4%	3.5	10%
10	4.0	11%	0.5	1%	0.5	1%
Total	35.0	100.0%	35.0	100%	35.0	100%



Requirements for Advanced Certificates

- To earn a certificate, one must:
 - Hold a Foundation Level certificate issued by an ISTQB-recognized Exam Board or Member Board
 - Have appropriate experience in software testing or development, between 2-5 years, depending on degree held and certificate(s) sought
 - Subscribe to the Code of Ethics in the syllabus
- Accredited training is recommended but not required



Being an Advanced Test Manager

- You should be able to:
 - Define the overall testing goals and strategy for the systems being tested
 - Plan, schedule and track the tasks
 - Describe and organize the necessary activities
 - Select, acquire and assign the adequate resources to the tasks
 - Select, organize and lead testing teams
 - Organize the communication between the members of the testing teams, and between the testing teams and all the other stakeholders
 - Justify the decisions and provide adequate reporting information where applicable
- Advanced Test Manager exams (and courses) focus on these main concepts



Being an Advanced Test Analyst

- You should be able to:
 - Implement the test strategy with a focus on business domain requirements
 - Analyze the system based on user quality expectations and apply that analysis to the testing to be done
 - Evaluate the system requirements to determine whether the business objectives can be met by that system
 - Prepare and execute adequate testing activities, and report on the progress of these activities
 - Provide the necessary evidence and data to support evaluations and findings
 - Implement the necessary tools and techniques to achieve the defined goals
- Advanced Test Analyst exams (and courses) focus on these main concepts



Being an Advanced Technical Test Analyst

- You should be able to:
 - Structure the tasks defined in the test strategy in terms of technical requirements
 - Analyze the internal structure of the system in sufficient detail to meet the expected quality level
 - Evaluate the system in terms of technical quality attributes such as performance, security, etc.
 - Prepare and execute adequate testing and report on progress
 - Conduct technical testing activities
 - Provide the necessary evidence to support evaluations
 - Implement the necessary tools and techniques
- Advanced Technical Test Analyst exams (and courses) focus on these main concepts



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