







184,50€

The Foundation Level syllabus forms the basis of the International Software Testing Qualifications Board (ISTQB®) Certified Tester Scheme.

ISTQB® Foundation Level is relevant across software delivery practices including Waterfall, Agile, DevOps and Continuous Delivery.

The CTFL 4.0 certification is suitable for anyone who needs to demonstrate practical knowledge of the fundamental concepts of software testing. It is relevant for individuals in roles such as testers, test analysts, test engineers, test consultants, test managers, user acceptance testers and software developers.

It is also appropriate for individuals who need a basic understanding of software testing including project managers, quality managers, software development managers, business analysts, IT directors and management consultants.

It is recommended that participants have, at least, 6 months of experience in the software testing area.

Fundamentals of Testing	Testing Troughout the Software Development Lifecycle	Static Testing	Test Analysis & Design	Managing the Test Activities	Test Tools
What is Testing?	Testing in the Context of an SDLC	Static Testing Basics	Test Techniques Overview	Test Planning	Tool Support for Testing
Why is Testing Necessary?	Test Levels & Test Types	Feedback & Review Process	Black-box Test Techniques	Risk Management	Benefits & Risks of Test Automation
Testing Principles	Maintenance Testing		White-box Test Techniques	Test Monotoring, Control & Completion	
Test Activities, Testware & Test Roles			Experience-based Test Techniques	Configuration Managment	
Essential Skills & Good Practices in Testing			Collaboration- -based Test Approaches	Defect Managment	



BUSINESS OUTCOMES

- Understand what testing is and why it is beneficial;
- Understand fundamental concepts of software testing;
- Identify the test approach and activities to be implemented depending on the context of testing;
- Assess and improve the quality of documentation;
- Increase the effectiveness and efficiency of testing;
- Align the test process with the software development lifecycle;
- Understand test management principles;
- Write and communicate clear and understandable defect reports;
- Understand the factors that influence the priorities and efforts related to testing;
- Work as part of a cross-functional team;
- Know risks and benefits related to test automation;
- Identify essential skills required for testing;
- Understand the impact of risk on testing;
- Effectively report on test progress and quality



















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Agile testing is a relatively new approach to software testing that follows the principles of agile software development as outlined in the Agile Manifesto.

A tester on an Agile project will work differently than one working on a traditional project. Testers must understand the values and principles that underpin Agile projects, and how testers are an integral part of a whole-team approach together with developers and business representatives.

There is a lot of confusion concerning agile testing – which means there's an educational opportunity as well. The **Agile Tester** will give the tester the knowledge to be part of agile testing teams and achieve high performance.

To be eligible to undertake the Agile Tester Foundation certification exam, candidates must first hold the ISTQB® Foundation Certificate.

Agile Software Development	Fundamental Agile Testing Principles, Practices and Processes	Agile Testing Methods, Techniques and Tools
The fundamentals of Agile Software Development	The Differences between Testing in Traditional and Agile Approaches	Agile Testing Methods
Aspects of Agile Approaches	Status of Testing in Agile Projects	Assessing Quality Risks and Estimating Test Effort
	Role and Skills of a Tester in an AgileTeam	Techniques in Agile Projects
* * * * * * * * * * * * * * * * * * *		Tools in Agile Projects



BUSINESS OUTCOMES

- Collaborate in a cross-functional Agile team being familiar with principles and basic practices of Agile software development;
- Adapt existing testing experience and knowledge to Agile values and principles;
- Support the Agile team in planning test-related activities;
- Apply relevant methods and techniques for testing in an Agile project;
- Assist the Agile team in test automation activities;
- Assist business stakeholders in defining understandable and testable user stories, scenarios, requirements and acceptance criteria as appropriate;
- Work and share information with other team members using effective communication styles and channels.

In general, a Certified Tester Foundation Level – Agile Tester is expected to have acquired the necessary skills to working effectively within an Agile team and environment.

















ISTQB® CTFL Performance Testing

The Foundation Level Performance Testing qualification is aimed at people who already hold the Software Testing Foundation and wish to develop further their expertise in Performance Testing.

To be eligible to undertake the Performance Testing Foundation certification exam, candidates must first hold the ISTQB® Foundation Certificate.

Basic Concepts	Performance Measurement Fundamentals	Performance Testing in the Software Lifecycle	Performance Testing Tasks	Tools
Principles of Performance Testing	Typical Metrics Collected	Principal Performance Testing Activities	Planning	Tool Support
Types of Performance Testing	Aggregating Results	Categories of Performance Risks for Different Architectures	Analysis, Design and Implementation	Tool Suitability
Testing Types in Performance Testing	Key Source of Metrics	Performance Risks Across the Software Development Lifecycle	Execution	
The Concept of Load Generation	Typical Results	Performance Testing Activities	Analyzing Results and Reporting	
Common Performance Efficiency Failure Modes and Their Causes				



BUSINESS OUTCOMES

- Understand the basic concepts of performance efficiency and performance testing;
- Define performance risks, goals, and requirements to meet stakeholder needs and expectations;
- Understand performance metrics and how to collect them;
- Develop a performance test plan for achieving stated goals and requirements;
- Conceptually design, implement, and execute basic performance tests;
- Analyze the results of a performance test and state implications to various stakeholders;
- Explain the process, rationale, results, and implications of performance testing to various stakeholders;
- Understand categories and uses for performance tools and criteria for their selection;
- Determine how performance testing activities align with the software lifecycle.















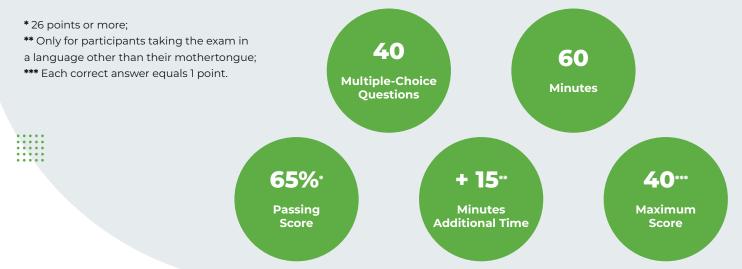
ISTQB® CTFL Usability Testing



The Foundation Level Usability Testing qualification is aimed at people who have already achieved a Foundation point in their careers in software testing and wish to develop further their expertise in Usability Testing.

To be eligible to undertake the Usability Testing Foundation certification exam, candidates must first hold the ISTQB® Foundation Certificate.

CONTENTS	Usability Testing		
	Introduction		
Basic Concepts	Step-By-Step Approach to Usability Testing		
Fundamentals	Prepare Usability Test		
Evaluating Usability, User Experience and Accessibility	Conduct Usability Test Session		
Usability Evaluation in Human-Centered Design	Analysis of Findings		
Diales in Hankility, Heav Eynavianas and Assassibility	Communicate Results and Findings		
Risks in Usability, User Experience and Accessibility Introduction	Quality Control of a Usability Test		
Typical Risks	Challenges and Frequent Mistakes		
	User Surveys		
Usability and Accessibility Standards	Introduction		
Usability Standards and Manufacturer Guidelines	Step-By-Step Approach to User Surveys		
Accessibility Standards	Standardized Questionnaires		
Usability Reviews	Selecting Appropriate Methods		
Introduction and Approach	Criteria for Selecting a Method		
Types of Usability Review	Summary of Roles and Responsibilities		
	Usability Tester		
	Moderator and Note-Taker		



BUSINESS OUTCOMES

- Understand the basic concepts of usability and usability testing;
- Identify and classify the severity of usability risks and potential accessibility violations in a given product at any stage of a development cycle;
- Cite relevant standards for usability, user experience, and accessibility and verify their implementation in a given product;
- Set up procedures so that stated usability, user experience and accessibility goals may be verified in practice for a given product;
- Design and monitor the implementation of a test plan for achieving stated usability, user experience and accessibility goals;
- Explain the rationale, process and results of usability, user experience and accessibility evaluations to non-specialist stakeholders.





















This **Acceptance Testing** qualification is aimed at anyone involved in software acceptance testing activities. This includes people in roles such as product owners, business analysts, testers, test analysts, test engineers, test consultants, test managers, user acceptance testers, and software developers.

The focus of the syllabus is on the concepts, methods and practices of collaboration between product owners / business analysts and testers in acceptance testing.

To be eligible to undertake the Acceptance Testing Foundation certification exam, candidates must first hold the ISTQB® Foundation Certificate.

Introduction and Foundations	Acceptande Criteria, Acceptance Tests and Experience	Business Process and Business Rules Modeling	Acceptance Testing for Non-Functional Requirements	Collaborative Acceptance Testing
Fundamental Relationships	Writing Acceptance Criteria	Modeling Business Processes and Rules	Non-functional characteristics and quality in use	Collaboration
Business Analysis and Acceptance Testing	Designing Acceptance Tests	Deriving Acceptance Tests	Usability and user experience	Activities
	Experience-based Approaches	Business Process Modeling for Acceptance Testing	Performance efficiency	Tool support
			Security	

- *26 points or more;
- ** Only for participants taking the exam in a language other than their mothertongue;





BUSINESS OUTCOMES

For business analysts and product owners:

- Contribute to an organization's acceptance testing activities by participating in the acceptance test design
 phase and supporting the alignment of the product with the business requirements;
- Contribute to an organization's acceptance testing activities by participating in the acceptance test design phase and supporting the alignment of the product with the business requirements;
- Contribute to the quality of the acceptance testing process, including validation and verification of produced artifacts;

For testers:

- Contribute to the definition of acceptance criteria during the requirements definition phase;
- Collaborate efficiently with business analysts and other stakeholders during all acceptance testing activities;
- Understand the business objectives, communicate with business units, and share common objectives for acceptance testing.

















ISTQB® CTFL Automotive Software Tester

Associate Price

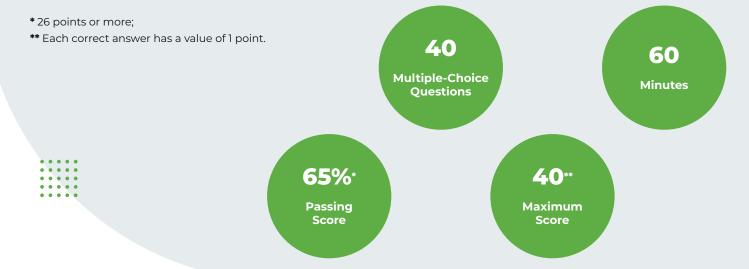
246€

The amounts mentioned include VAT at the normal rate in force.

The Foundation Level Automotive Software Tester qualification is aimed at people who have already achieved a Foundation point in their careers in software testing and wish to develop further their expertise in Automotive Software Testing.

To be eligible to undertake the Automotive Software Tester Foundation certification exam, candidates must first hold the ISTQB® Foundation Certificate.

Introduction	Standards for E/E Testing	Testing in Virtual Environments	Automotive-specific Static and Dynamic Test Techniques
Requirements from Divergent Project Objective and Increasing Product Complexity	Automotive SPICE (ASPICE)	Test Environment in General	Static Test Techniques
Project Aspects Influenced by Standards	ISO 26262	Testing in XiL Test Environments	Dynamic Test Techniques
The Six Generic Phases in System Lifecycle	AUTOSAR		
Tester's Contrib. to Release Process	Comparison		



BUSINESS OUTCOMES

- Collaborate effectively in a test team;
- Adapt the test techniques known from the ISTQB® Certified Tester Foundation Level (CTFL®) to the specific automotive project requirements;
- Consider the basic requirements of the relevant automotive standards (Automotive SPICE®, ISO 26262, etc.) and select suitable test techniques;
- Apply the virtual test methods (e.g. HiL, SiL, MiL, etc.) in test environments.

















ISTQB® CTFL Mobile Application Tester

Associate Price

246€

The amounts mentioned include VAT at the normal rate in force.

The Foundation Level Mobile Application Testing qualification is aimed at people who have already achieved a Foundation point in their careers in software testing and wish to develop further their expertise in Mobile Application Testing.

To be eligible to undertake the Mobile Application Tester Foundation certification exam, candidates must first hold the ISTQB® Foundation Certificate.

Business and Technology Drivers		Mobile Applications Test Types		Common Test Types and Test Process for Mobile Applications	
Mobile Analytics Data	Business Models for Mobile Apps	Testing for Compatibility with Device Hardware	Testing for App Interaction with Device Software	Common Test Types Applicable for Mobile Testing	Additional Test Levels Applicable for Mobile Applications
Mobile DeviceTypes	Types of Mobile Applications	Testing Various Connectivity Methods		Experience-Based Testing Techniques	Mobile Test Process and Approaches
Mobile Application Architecture	Test Strategy for Mobile Apps				
Challenges of Mobile Application Testing	Risks in Mobile Application Testing				

- *26 points or more;
- ** Only for participants taking the exam in a language other than their mothertongue;

*** Each correct answer equals 1 point.



BUSINESS OUTCOMES

- Understand and review business and technology drivers for mobile apps in order to create a test strategy;
- Identify and understand the key challenges, risks and expectations associated with testing a mobile application;
- Apply test types and levels specific to mobile applications;
- Apply common test types, such as those mentioned in ISTQB® Certified Tester Foundation Level syllabus
 2018, in the mobile specific context;
- Carry out the activities required specifically for mobile application testing as part of the main activities of the ISTQB® test process;
- Identify and use suitable environments and appropriate tools for mobile application testing;
- Understand methods and tools specifically to support mobile application test automation.



















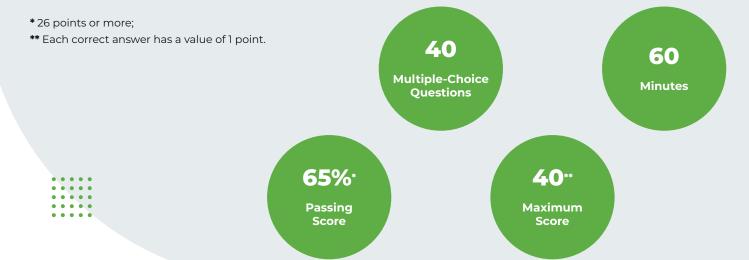
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Model-based testing is an innovative test approach to improve effectivity and efficiency of the test process. A model-based tester on a project uses models to drive test analysis and design, and keeps advantage of the models for other testing activities such as test implementation and reporting.

ISTQB® Model-Based Tester certification complements the core foundation level as a specialist module. It provides a practical and easy entry to the MBT approach.

To be eligible to undertake the Model-Based Tester Foundation certification exam, candidates must first hold the ISTQB® Foundation Certificate.

Introduction Model-Based Testing	MBT Modeling	Selection Criteria for Test Case Ganeration	MBT Test Implementation and Execution	Evaluating and Deploying MBT Approach
Objectives and Motivations for MBT	MBT Modeling Activities	Classification of MBT Test Selection Criteria	Specifics of MBT Test Implementation and Execution	Evaluate an MBT Deployment
MBT Activities and Artifacts	Language for MBT Models	Applying Test Selection Criteria	Activities of Test Adaptation in MBT	Manage and Monitor the Deployment of an MBT Approach
IIntegrating MBT into the Software Development Lifecycles	Good Practices for MBT Modeling Activities			



BUSINESS OUTCOMES

- Objectives and motivations for model-based testing;
- Activities specific to MBT and essential MBT artifacts;
- Integrating MBT into the software development lifecycle;
- MBT modeling (good practices, languages, types of MBT models);
- Test selection criteria used in model-based testing;
- MBT test implementation and execution;
- Evaluating and deploying an MBT Approach.

















ISTQB® CTFL Gambling Industry Tester

Associate Price

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The Foundation Level Gambling Industry Tester Specialist Certificate qualification is aimed at four main groups of professionals:

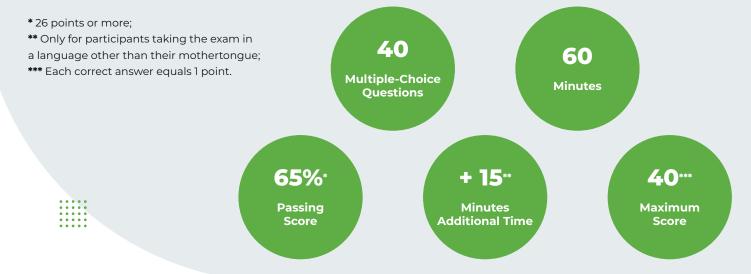
- 1. Professionals who have achieved in-depth testing experience in traditional methods and would like to get a Foundation Level Gambling Industry Tester Specialist Certificate;
- **2.** Junior professional testers who are just starting in the testing profession, have received the **Foundation Level** certificate, and would like to know more about the tester's role in a Gambling Industry environment;
- **3.** Professionals who are relatively new to testing and are required to implement test approaches, methods and techniques in their day to day job in Gambling Industry projects. These professionals include people who are in roles such as testers, test analysts, test engineers, test consultants, test managers, user acceptance testers, and software developers;
- **4.** This Foundation Level Gambling Industry Tester Specialist certification may also be appropriate for anyone who wants a deeper understanding of software testing in the gambling industry, such as project managers, quality managers, software development managers, business analysts, IT directors, and management consultants.

To be eligible to undertake the Agile Tester Foundation certification exam, candidates must first hold the ISTQB® Foundation Certificate.

CONTENTS

Introduction to the Gambling Industry		The Gambling Industry Ecosystems		Testing in the Gambling Industry	
Objectives and Overview	Key Concepts in the Gambling Industry	Testing Phases with the Gambling SDLC	The Gambling Ecosystems	Math Testing	Platform Testing
Gambling Activities and Artifacts	Gambling Industry Metrics			Casino System Testing	Protocol Testing
Types of Gambling	Gambling SDLC			Hardware Testing	Remote Gambling Testing
				System and Network Security Testing	Jackpot Controller Testing
				Online Gambling	

Testing



BUSINESS OUTCOMES

- Promote efficient and effective communication by using a common vocabulary inside the gambling industry;
- Understand specific quality attributes that require testing within the gambling industry;
- Understand typical test practices by describing the standard software development and testing methodologies within the gambling industry;
- Understand gambling hardware and software certification which is the main difference between the gambling industry and other industries;
- Use established techniques for designing tests aligned with gambling specific needs;
- Appreciate the importance of jurisdictions and regulatory bodies in the gambling industry.

In general, a Certified Foundation Level Gambling Industry Tester Specialist is expected to have acquired the necessary skills to working effectively within a Gambling Industry testing team and environment.

















Safety & AI





246€

The Foundation Level AI Testing qualification is aimed at anyone involved, or wants a basic understanding of in testing AI-based systems and/or AI for testing.

To be eligible to undertake the AI Testing certification exam, candidates must first hold the ISTQB® Foundation Certificate.

Introduction to Al	Machine Learning (ML) - Overview
Definition of AI & AI Effect	Forms of ML
Narrow, General& Super AI	ML Workflow
Al-based & Conventional Systems	Selecting a Form of ML
Al Technologies	Factors Involved in ML Algorithm Selection
Al Development Frameworks	Overfitting & Underfitting
Hardware for AI-Based Systems	ML - Data
Al as a Service (AlaaS)	Data Preparation as Part of the ML Workflow
Pre-Trained Models	Training, Validation & Test Datasets in the ML Workflow
Standards, Regulations & Al	Dataset Quality Issues
Quality Characteristic for Al-Based Systems	Data Quality & Its Effect on the ML Model
Flexibility & Adaptability	Data Labelling for Supervised Learning
Autonomy	ML Functional Performance Metrics
Evolution	Confusion Matrix
Bias	Add ML Functional Performance Metrics for Classification, Regression & Clustering
Ethics	Limitations of ML Functional Performance Metrics
Side Effects & Reward Hacking	Selecting ML Functional Performance Metrics
Transparency, Interpretability & Explainability	Benchmark Suites for ML Performance



ISTQB® CTFL Al Testing

Test Objectives & Acceptance Criteria



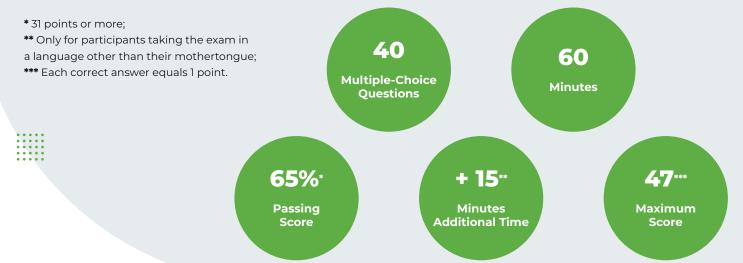
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246€

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CONTENTS	
ML Neural Networks & Testing	
Neural Networks	Methods & Techniques for the Testing of AI-Based System
Coverage Measures for Neural Networks	Adversarial Attacks & Data Poisoning
Testing Al-Based Systems Overview	Pairwise Testing
Specification of Al-Based Systems	A/B Testing
Test Levels for AI-Based Systems	Back-to-Back Testing
Test Data for Testing Al-Based Systems	Metamorphic Testing (MT)
Testing for Automation Bias in Al-Based Systems	Experience Based Testing of AI-Based Systems
Documentation an Al Component	Selecting Test Techniques for Al-Based System
Testing for Concept Drift	Test Environments for Al-Based Systems
Selecting a Test Approach for an ML System	Test Environments for Al-Based Systems
Testing Al-Specific Quality Characteristics	Virtual Test Environments for Testing Al-Based Systems
Challenges Testing Self-Learning Systems	Using AI for Testing
Testing Autonomous Self-Learning Systems	Al Technologies for Testing
Testing for Algorithmic, Sample & Inappropriate Bias	Using AI to Analyze Defect Reports
Challenges Testing Probabilistic & Non-Deterministic AI-Based Systems	Using AI for Test Case Generation
Challenges Testing Complex AI-Based Systems	Using AI for the Optimization of Regression Test Suites
Testing Transparency Interpretability & Explainbility of AI-Based Systems	Using AI for Defect Prediction
Test Oracles for Al-Based Systems	Using AI for Testing User Interfaces



BUSINESS OUTCOMES

- Understand the current state and expected trends of Al;
- Experience the implementation and testing of a ML model and recognize where testers can best influence its quality;
- Understand the challenges associated with testing AI-Based systems, such as their self-learning capabilities, bias, ethics, complexity, non-determinism, transparency and explainability;
- Contribute to the test strategy for an AI-Based system;
- Design and execute test cases for Al-based systems;
- Recognize the special requirements for the test infrastructure to support the testing of Al-based systems;
- Understand how AI can be used to support software testing.



















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Fundamentals of Testing	Testing Troughout the Software Development Lifecycle	Static Testing	Test Analysis & Design	Managing the Test Activities	Test Tools
What is Testing?	Testing in the Context of an SDLC	Static Testing Basics	Test Techniques Overview	Test Planning	Tool Support for Testing
Why is Testing Necessary?	Test Levels & Test Types	Feedback & Review Process	Black-box Test Techniques	Risk Management	Benefits & Risks of Test Automation
Testing Principles	Maintenance Testing		White-box Test Techniques	Test Monotoring, Control & Completion	
Test Activities, Testware & Test Roles			Experience-based Test Techniques	Configuration Managment	
Essential Skills & Good Practices in Testing			Collaboration- -based Test Approaches	Defect Managment	



BUSINESS OUTCOMES

- Understand what testing is and why it is beneficial;
- Understand fundamental concepts of software testing;
- Identify the test approach and activities to be implemented depending on the context of testing;
- Assess and improve the quality of documentation;
- Increase the effectiveness and efficiency of testing;
- Align the test process with the software development lifecycle;
- Understand test management principles;
- Write and communicate clear and understandable defect reports;
- Understand the factors that influence the priorities and efforts related to testing;
- Work as part of a cross-functional team;
- Know risks and benefits related to test automation;
- Identify essential skills required for testing;
- Understand the impact of risk on testing;
- Effectively report on test progress and quality

For more information, please contact: rui.cardoso@pstqb.pt

















ISTQB® CT Foundation Level

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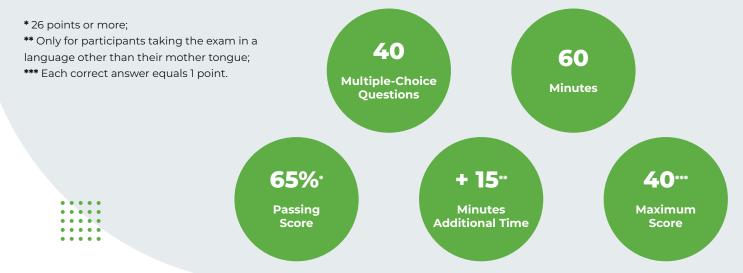
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Fundamentals of Testing	Testing Troughout the Software Development Lifecycle	Static Testing	Test Techniques	Test Managment	Tool Support for Testing
What is Testing?	Software Development Lifecycle Models	Static Testing Basics	Categories of Test Techniques	Test Organisation	Test Tool Considerations
Why is Testing Necessary?	Test Levels	Review Process	Black-box Test Techniques	Test Planning and Estimation	Effective Use of Tools
Seven Testing Principles	Test Types		White-box Test Techniques	Test Monotoring and Control	
Test Process	Maintenance Testing		Experience-based Test Techniques	Configuration Managment	
The Psychology of Testing				Risk and Testing	
				Defect Managment	



BUSINESS OUTCOMES

- Promote efficient and effective communication by using a common vocabulary for software testing;
- Understand fundamental concepts of software testing;
- Demonstrate understanding of how different development and testing practices, and different constraints on testing, may apply in optimizing testing to different contexts;
- Contribute effectively in reviews;
- Use established techniques for designing tests at all test levels;
- Interpret and execute tests from given test specifications. Report on test results;
- Understand test management principles for resources, strategies, planning, project control and risk management;
- Write and communicate clear and understandable defect reports;
- Understand the project factors that drive the test priorities and test approach;
- Understand the value that software testing brings to stakeholders;
- Appreciate how testing activities and work products align with project objectives, measures and targets;
- Assist in the selection and implementation process of testing tool.











