



# **BCS Professional Certificate – Software Tester**

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This profession certification is not regulated by the following United Kingdom Regulators - Ofqual, Qualification in Wales, CCEA or SQA

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## Change History

Any changes made to the syllabus shall be clearly documented with a change history log. This shall include the latest version number, date of the amendment and changes made. The purpose is to identify quickly what changes have been made.

Version Number	Changes Made
V1.1	Advice added under the introduction section for candidates wishing to proceed through to the Advanced level certification.
V1.0	Final – Replacement for the Intermediate Certificate in Software Testing
V0.3 Jan 2020	Final Draft
V0.2 November 2019	Final Draft Version for review
V0.1 October 2019	Initial draft

## Introduction

Using the ISTQB Foundation Level as a base, the BCS Professional Certification - Software Tester syllabus develops and supplements core testing principles allowing for the taking into account the typical circumstances that anyone involved in testing encounters in the workplace.

The BCS Professional Certificate - Software Tester exam demonstrates that candidates can apply software testing knowledge and skills to practical real-life situations through scenario-driven questions.

The BCS Professional Certificate - Software Tester can be used as a standalone certification and will not on its own enable candidates to advance to the higher-level certifications. To advance through to these Advanced level Certifications the candidate will need to sit the ISTQB Certified Tester Foundation level.

## Target Audience

This BCS Professional Certificate - Software Tester syllabus is for anyone involved in practical software testing activities. It is not role-specific and takes into account the typical cross-skills required for a tester at any level working in a collaborative software development environment.

The BCS Professional Certificate - Software Tester exam bridges the gap between the ISTQB Foundation and the role-based ISTQB Advanced Certificates (Test Manager, Test Analyst and Technical Test Analyst) and prepares candidates for more complex and in-depth role-based syllabi and scenario-driven examinations.

## Levels of Knowledge / SFIA Levels

This syllabus will provide candidates with the levels of difficulty / knowledge highlighted within the following table, enabling them to develop the skills to operate at the levels of responsibility indicated. The levels of knowledge and SFIA levels are further explained on the website [www.bcs.org/levels](http://www.bcs.org/levels).

Level	Levels of Knowledge	Levels of Skill and Responsibility (SFIA)
7		Set strategy, inspire and mobilise
6	Evaluate	Initiate and influence
5	Synthesise	Ensure and advise
4	Analyse	Enable
3	Apply	Apply
2	Understand	Assist
1	Remember	Follow

# Learning Outcomes

Candidates should be able to demonstrate knowledge, understanding, application and analysis of Software Testing processes, practices and techniques in the following areas:

## 1. Testing Activities in Development Lifecycles

- Understand the characteristics of software architecture that impact on software testing in the development lifecycle
- Understand the core testing knowledge, skills and behaviours common to multi-skilled roles in the development lifecycle
- Analyse project scenarios to choose appropriate testing activities

## 2. Testing and Risk

- Apply risk analysis for a given testing scenario
- Analyse project scenarios to choose testing types and activities to address specific product and project risks

## 3. Test Management

- Analyse testing scenarios to select appropriate test entry and exit criteria to meet given testing objectives
- Analyse defect management processes to determine improvements that address given issues

## 4. Test Analysis and Design

- Understand the criteria, benefits and pitfalls for selecting and deploying test techniques
- Analyse a testing scenario to select appropriate test techniques
- Understand the relationship between typical test measures and the effectiveness of information traceability
- Analyse a testing scenario to select appropriate coverage measures

## 5. Software Product Quality Characteristics

- Understand key product risks relating to:
  - Security
  - Performance Efficiency
  - Usability
  - User Experience (UX)
  - Accessibility
  - Installability
  - Adaptability
  - Replaceability

- Apply a high-level testing approach which addresses risks in:
  - Security
  - Performance Efficiency
  - Usability

## 6. Test Automation Characteristics

- Understand the role of test automation and the objectives for each level in the development lifecycle with respect to test automation activities
- Understand the characteristics of tests to make them suitable for test automation

## Study Format and Duration

Candidates can study for this certificate in two ways:

- Attending an accredited training course. This will require a minimum of 17 hours of study over a minimum of 3 days.
- Self-study. Self-study resources include online learning and recommended reading (see syllabus Reading List).

Candidates should spend approximately 60 hours on self-study, depending on existing knowledge.

## Eligibility for the Examination

There are no pre-requisites for entry to the examination, although holding the ISTQB Foundation Certificate in Software Testing and accredited training is strongly recommended.

## Examination Format and Duration

Type	40 Multiple Choice questions
Duration	90 minutes
Supervised	Yes
Open Book	No (no materials can be taken into the examination room)
Passmark	26/40 (65%)
Delivery	Digital or paper based.

## Additional Time

### For Candidates Requiring Reasonable Adjustments Due to a Disability.

Please refer to the [reasonable adjustments policy](#) for detailed information on how and when to apply.

### For Candidates Whose Language is Not the Language of the Examination

If the examination is taken in a language that is not the candidate's native/official language, then they are entitled to:

- 25% extra time.
- Use their own paper language dictionary (whose purpose is translation between the examination language and another national language) during the examination. Electronic versions of dictionaries will not be allowed into the examination room.

## Guidelines for Accredited Training Organisations

Each major subject heading in this syllabus is assigned a percentage weighting. The purpose of this is:

- 1) Guidance on the proportion of content allocated to each topic area of an accredited course.
- 2) Guidance on the proportion of questions in the exam.

Courses do not have to follow the same order as the syllabus and additional exercises may be included, if they add value to the training course.

## Question Weighting

Syllabus Learning Objectives	% Weighting	Target No exam questions
Testing Activities in Development Lifecycles	20%	8
Testing and Risk	12.5%	5
Test Management	17.5%	7
Test Analysis and Design	20%	8
Software Product Quality Characteristics	22.5%	9
Test Automation Characteristics	7.5%	3
<b>Total</b>	<b>100%</b>	<b>40</b>

## Trainer Criteria

Criteria	<ul style="list-style-type: none"><li>• Hold the Professional Certificate – Software Tester or any ISTQB Core Advanced Level Certificate</li><li>• Have 10 days training experience</li><li>• Have a minimum of 3 years practical experience in software testing</li></ul>
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## Classroom Size

Recommended maximum trainer to candidate ratio	1:16
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## Excerpts from BCS Books

Accredited Training Organisations may include excerpts from BCS books in course materials. To use excerpts from the books, a licence from BCS is required, which will be considered on request by contacting the Head of Publishing at BCS.



# Syllabus

## Learning Objectives

### 1. Testing Activities in Development Lifecycles (20%)

Candidates will be able to:

- 1.1. Classify the characteristics of software architecture that impact on software testing in the development lifecycle (K2)
- 1.2. Classify the main differences between lifecycle approaches from a testing perspective (K2)
- 1.3. Explain the core testing behaviours, skills and tools that are common to Developers, Testers and multi-skilled roles in development lifecycles (K2)
- 1.4. Explain how other processes interface with testing during development (K2)
- 1.5. Analyse a typical project scenario and choose appropriate testing activities for the situation (K4)

### 2. Testing and Risk (12.5%)

Candidates will be able to:

- 2.1. Explain how risks can interact with other risks (K2)
- 2.2. Apply Risk Analysis for a given scenario using qualitative and quantitative factors for impact and likelihood (K3)
- 2.3. Choose which test types and activities should be employed to address different types of risk within a given scenario (K4)

### 3. Test Management (17.5%)

Candidates will be able to:

- 3.1. Interpret high-level project test plans to produce high-level drafts of suitable subordinate test plans for test levels/types/iterations/releases (K4)
- 3.2. Explain possible alternative courses of action to take when test entry and exit criteria are not met (K2)
- 3.3. Analyse testing scenarios to select appropriate test entry and exit criteria to meet defined objectives (K4)
- 3.4. Analyse a simple defect management process and determine what improvements could be made to address known issues (K4)

#### **4. Test Analysis and Design (20%)**

Candidates will be able to:

- 4.1. Describe possible criteria for selecting test techniques (K2)
- 4.2. Explain the benefits and pitfalls of deploying test techniques (K2)
- 4.3. Analyse a practical testing scenario and select appropriate test techniques (K4)
- 4.4. Explain the relationship between typical test coverage measures and the information traceability requirements of the test process (K2)
- 4.5. Analyse a practical testing scenario and select appropriate test coverage measures (K4)

#### **5. Software Product Quality Characteristics (22.5%)**

Candidates will be able to:

- 5.1. Explain the importance of testing software product characteristics (K2)
- 5.2. Explain key product risks relating to security (K2)
- 5.3. Choose a high-level testing approach which addresses security risks (K3)
- 5.4. Explain key product risks relating to performance efficiency (K2)
- 5.5. Choose a high-level testing approach which addresses performance efficiency risks (K3)
- 5.6. Explain key product risks relating to usability, user experience and accessibility (K2)
- 5.7. Choose a high-level testing approach which addresses usability risks (K3)
- 5.8. Explain key product risks relating to installability, adaptability and replaceability (K2)

#### **6. Test Automation Characteristics (7.5%)**

Candidates will be able to:

- 6.1. Explain the role of Test Automation in the context of the software development lifecycle (K2)
- 6.2. Summarise the objectives for each test level with respect to Test Automation activities (K2)
- 6.3. Identify the characteristics required of tests to make them suitable for Test Automation (K2)

## Reading List

- Bath, G and McKay, J (2014) *The Software Test Engineer's Handbook*, Rocky Nook
- Beizer, B. (1990) *Software Testing Techniques (2e)*, Van Nostrand Reinhold: Boston MA
- Black, R. (2009) *Managing the Testing Process (3e)*, John Wiley & Sons: New York NY
- Black, R. (2017) *Agile Testing Foundations*, BCS Learning & Development Ltd: Swindon UK
- Gerrard, P. (2009) *The Tester's Pocketbook* by Paul Gerrard, Greener Books: London UK
- Graham, D. and Fewster, M. (2012) *Experiences of Test Automation*, Pearson Education: Boston MA
- Gregory, J. and Crispin, L. (2015) *More Agile Testing*, Pearson Education: Boston MA
- Hambling, B. et al, (2018) *Software Testing: An ISTQB-BCS Certified Tester Foundation guide*, BCS Learning & Development Ltd: Swindon UK
- Jonassen Hass, A-M. (2008) *Guide to Advanced Software Testing*. Artech House
- Jorgensen, P. (2014) *Software Testing, A Craftsman's Approach (4e)*, CRC Press: Boca Raton FL
- Kaner, C., Padmanabhan, S. and Hoffman, D. (2013) *The Domain Testing Workbook, Context-Driven Press: New York NY*
- Myers, G. (2011) *The Art of Software Testing, (3e)*, John Wiley & Sons: New York NY

## Additional Guidance

Please see separate document for syllabus content to support the Learning Objectives for each Topic Area.