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# **BCS Certificate in Requirements Engineering Syllabus**

**Version 2.3  
March 2015**

## 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 and Date	Changes Made
Version 2.3 March 2015	Updated language requirements for extra time and use of dictionaries. Minor update to Reading List. Added in the trainer requirements and classroom size for ATOs
Version 2.2 September 2012	Updated the Reasonable Adjustments Requirements and Removed the Definitions of Terminology Included a section to cover excerpts from BCS books
Version 2.1 August 2012	Added in details of extra time for foreign language candidates
Version 2.0 August 2011	Updated ISEB to BCS logos and strapline. Added table of contents, levels of knowledge, levels of skill and responsibility, format of the examination, change history and definition of terminology. Technical Changes: Linkage of requirements to the business context and business case emphasised Lifecycle for business change and benefits confirmation removed. Framework for Requirements Engineering clarified. Changes to elicitation techniques – Ethnographic Studies removed, Focus Groups added Documentation styles added. Requirements Validation and Management reworded and clarified. Minor rewording and clarification of other syllabus points Swimlane diagrams removed.

# BCS Certificate in Requirements Engineering

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## Introduction

This certificate is concerned with one of the major areas of business analysis work, producing a well-organised and clearly-defined set of requirements.

The syllabus is structured around a five part framework for Requirements Engineering which is applied to a project initiated by an approved business case. The five elements of the framework are Requirements Elicitation, Requirements Analysis, Requirements Validation, Requirements Documentation and Requirements Management.

The syllabus requires that the candidate should be able to describe the objectives and techniques within each element of the framework.

Organisations can submit their own approaches for accreditation, provided that they show how all aspects of the syllabus are handled in their proposed approach.

Candidates may be expected to apply any of the techniques defined in the syllabus in the examination for this certificate.

## Objectives

Holders of the BCS Certificate in Requirements Engineering should be able to:

- Explain the importance of linking requirements to the Business Case
- Describe the roles and responsibilities of key stakeholders in the requirements engineering process
- Explain the use of a range of requirements elicitation techniques and the relevance of the techniques to business situations
- Analyse, prioritise and organise elicited requirements
- Document requirements
- Identify problems with requirements and explain how requirements documentation may be improved
- Create a model of the features required from a system
- Interpret a model of the data requirements for an information system
- Describe the principles of Requirements Management and explain the importance of managing requirements
- Describe the use of tools to support Requirements Engineering
- Explain the process and stakeholders involved in Requirements Validation

## Eligibility for the Examination

There are no specific pre-requisites for entry to the examination; however candidates should possess the appropriate level of knowledge to fulfil the objective shown above.

## Duration and Format of the Examination

The format for the examination is a one hour written (open book) examination based on a business scenario with 15 minutes reading time.

## Duration and Format of the Course

Candidates can study for this certificate in two ways: by attending training courses provided by BCS Providers or by self-study. Training courses leading to the certificate should normally run for 21 hours.

The course can be delivered a number of different ways from traditional class-room based training to online e-learning.

## Additional time for candidates requiring Reasonable Adjustments due to a disability

Candidates may request additional time if they require reasonable adjustments in line with the BCS [reasonable adjustments policy](#). It will be the Examination Provider's responsibility to make a decision regarding candidate eligibility and keep a record of the decision. This is subject to audit by BCS.

## Additional time 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.

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

It will be the Examination Provider's responsibility to make the decision regarding candidate eligibility and keep a record of the additional time allowed. Candidates must request additional time in advance of the examination to allow the Examination Provider enough time to make suitable arrangements with the invigilator.

## Excerpts from BCS Books

Examination Providers may include excerpts from BCS books in the course materials. If you wish to use excerpts from the books you will need a license from BCS to do this. If you are interested in taking out a licence to use BCS published material you should contact the Head of Publishing at BCS outlining the material you wish to copy and the use to which it will be put.

# Syllabus

## 1. Introduction to Requirements Engineering (5%)

### 1.1 Framework for Requirements Engineering

- Requirements Engineering activities – Elicitation, Analysis, Validation, Documentation, Management
- Rationale for Requirements Engineering and the problems with requirements
- The importance of requirements planning and estimating

### 1.2 The business rationale and inputs

- The business case
- Terms of Reference / Project Initiation Document (PID)

## 2. Hierarchy of requirements (10%)

### 2.1 Building the hierarchy

### 2.2 Categories of requirements within the hierarchy

- General business requirements, including legal and business policy
- Technical policy requirements
- Functional requirements
- Non-functional requirements, including performance, usability, access, security, archiving, backup and recovery, availability, robustness

## 3. Stakeholders in the requirements process (5%)

### 3.1 Project Stakeholders

- Project Manager
- Business Analysis
- Developer

### 3.2 Business Stakeholders

- Project Sponsor
- Subject matter expert
- End users and managers

### 3.3 External stakeholders

- Customers
- Regulators
- Suppliers - products and services



## **4. Requirements Elicitation (20%)**

### **4.1 Knowledge types – tacit and non-tacit**

### **4.2 Elicitation techniques**

- Interviews
- Workshops
- Observation:
  - Formal/informal
  - Shadowing
- Focus groups
- Prototyping
- Scenarios
- Document Analysis
- Special purpose records
- Questionnaires

### **4.3 Understanding the applicability of techniques**

## **5. Use of models in Requirements Engineering (10%)**

### **5.1 The purpose of modelling requirements**

- Generating questions
- Cross-checking for consistency and completeness
- Defining business rules

### **5.2 Modelling the business context for the system**

### **5.3 Developing a model to represent the system processing requirements**

### **5.4 Interpreting a data model**

## **6. Requirements Documentation (15%)**

### **6.1 Documentation styles and levels of definition**

- User stories
- Use cases
- Requirements Catalogue

### **6.2 Requirements Catalogue**

- Identifier
- Name
- Description
- Acceptance criteria
- Source/Owner
- Rationale/Benefits
- Non-functional requirements
- Priority
- Related requirements/documents
- Author
- Version control/status
- Change history

## **7. Requirements Analysis (20%)**

7.1 Prioritising and packaging requirements for delivery

7.2 Organising requirements

7.3 Ensuring well-formed requirements

- Removing overlapping requirements
- Identifying and negotiating conflicts between requirements
- Removing ambiguity
- Ensuring feasibility
- Ensuring testability

7.4 Prototyping requirements

7.5 Verifying requirements

## **8. Requirements Validation (5%)**

8.1 Agreeing the requirements document

8.2 Types of reviews

8.3 Stakeholders and their areas of concern

## **9. Requirements Management (10%)**

9.1 Dealing with changing requirements

9.2 The importance of traceability

- Vertical traceability (to business objectives)
- Horizontal traceability (from origin to deliver)

9.3 Traceability and ownership

9.4 Requirements Engineering support tools

## Levels of Knowledge

This course 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.

Level	Levels of Knowledge	Levels of Skill and Responsibility (SFIA)
K7		Set strategy, inspire and mobilise
K6	Evaluate	Initiate and influence
K5	Synthesise	Ensure and advise
K4	Analyse	Enable
K3	Apply	Apply
K2	Understand	Assist
K1	Remember	Follow

## Format of the Examination

This syllabus has an accompanying examination at which the candidate must achieve a pass score to gain the BCS Certificate in Requirements Engineering.

Type	Written examination based on a business scenario
Duration	1 hour preceded by 15 minutes reading time. Candidates are entitled to an additional 15 minutes if they are sitting the examination in a language that is not their native/official language
Pre-requisites	None
Supervised / Invigilated	Yes
Open Book	Yes
Pass Mark	50%
Distinction Mark	None
Use of Calculators	Calculators cannot be used during this examination
Delivery	Paper based examination

## Trainer Criteria

Criteria	<ul style="list-style-type: none"> <li>• Hold the BCS Certificate in Requirements Engineering</li> <li>• Have 10 days training experience or hold a train the trainer qualification</li> <li>• Have a minimum of 3 years practical experience in requirements engineering</li> </ul>
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## Classroom Size

Trainer to candidate ratio	1:16
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## Recommended Reading List

**Title:** Business Analysis (3<sup>rd</sup> Edition)  
**Author:** Debra Paul, Donald Yeates and James Cadle  
**Publisher:** BCS  
**Publication Date:** 2010  
**ISBN:** 9781906124618  
**URL:** <http://shop.bcs.org>

**Title:** Mastering the Requirements Process  
**Author:** Suzanne Robertson and James Robertson  
**Publisher:** Addison Wesley  
**Publication Date:** 1999  
**ISBN:** 978-0201360462

**Title:** Writing Effective Use Cases  
**Author:** Alistair Cockburn  
**Publisher:** Addison-Wesley  
**Publication Date:** October 2000  
**ISBN:** 0201702258

**Title:** User Stories Applied: For Agile Software Development  
**Author:** Mike Cohn  
**Publisher:** Addison Wesley  
**Publication Date:** March 2004  
**ISBN:** 9780321205681

**Title:** Requirements Engineering: Processes and Techniques  
**Author:** Gerald Kotonya and Ian Sommerville  
**Publisher:** John Wiley & Sons  
**Publication Date:** April 1998  
**ISBN:** 0471972088

**Title:** Use Case Modeling  
**Author:** Kirt Bittner and Ian Spence  
**Publisher:** Addison Wesley  
**Publication Date:** August 2002  
**ISBN:** 9780201709131

**Title:** Business Analysis Techniques: 72 Essential Tools for Success  
**Author:** James Cadle, Debbie Paul and Paul Turner  
**Publisher:** BCS  
**Publication Date:** February 2010  
**ISBN:** 9781906124236  
**URL:** <http://shop.bcs.org>

**Title:** Writing Better Requirements  
**Author:** Ian F Alexander and Richard Stevens  
**Publisher:** Addison-Wesley  
**Publication Date:** 2002  
**ISBN:** 0321131630

**Title:** Scenarios, Stories and Use Cases  
**Author:** Ian Alexander and Neil Maiden  
**Publisher:** John Wiley and Sons  
**Publication Date:** 2004  
**ISBN:** 0470861940

**Title:** Requirements by Collaboration  
**Author:** Ellen Gottesdiener  
**Publisher:** Addison Wesley  
**Publication Date:** April 2002  
**ISBN:** 9780201786064