BCS PROFESSIONAL CERTIFICATE IN DATA ANALYSIS

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hello@amatistraining.com
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+44 (0)1225 836084

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BCS Professional Certificate in Data Analysis

Introduction

The BCS Professional Certificate in Data Analysis comprises fundamental principles, concepts and techniques used to identify, analyse and model data. The aim of this certification is to enable candidates to define data requirements with detailed understanding and rigour. The certification examination assesses knowledge and understanding of a range of activities and techniques that may be used by business analysts to elicit and analyse data requirements and the business rules inherent in the data, and to define the structure of the data that will support the business requirements in an unambiguous fashion.

Learning outcomes

Upon completion of the certificate candidates will be able to demonstrate an understanding of:

- The basics of Data Analysis
- How to model data using class diagrams
- How to define data requirements
- The ways in which data is obtained and recorded
- How to analyse data for decision-making
- How data is protected

Target Audience

This certification is relevant for anyone wishing to gain an understanding of the principles, rationale and techniques of data analysis, including data architects, business analysts, project managers, business change managers and business managers.

Eligibility for the Examination

There are no pre-requisites for entry to the examination, although candidates should be prepared to be assessed in line with the objectives listed in the previous section. Candidates can study for the certificate by:

- Using our self-study material (approximately 20 hours)
- Attending our instructor-led BCS accredited training course (2-days)

Duration and Format of the Examination

The format for the examination is a supervised 90-minute multiple choice assessment. The examination is closed book i.e. no materials can be taken into the examination room. The pass mark is 26/40 (65%).

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Additional time for Candidates Requiring Reasonable Adjustments

Candidates may request additional time if they require reasonable adjustments. Please refer to the reasonable adjustments policy for detailed information on how and when to apply.

Additional time for Candidates Whose Native Language is not English

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.

Syllabus

For each top-level area of the syllabus a percentage and K level is identified. The percentage is the exam coverage of that area, and the K level identifies the maximum level of knowledge that may be examined for that area.

1. Introduction to data (10%: K2)

1.1 Define the terms: data, data analysis, data model, information and business intelligence

1.2 Distinguish between structured and unstructured data

1.3 Explain the following data concepts:

- o Conceptual, logical, physical data models
- o Static and dynamic views

1.4 Define the stages in the data lifecycle

- o Identifying data sources
- o Modelling data requirements
- o Obtaining data
- o Recording data
- o Using data for business decisions and operations
- o Removing data

2. Modelling data using Class Diagrams (35%: K4)

2.1 Define concepts and notations used in class diagrams

- o Classes and objects
- o The structure of a class: name, attributes, operations
- o Modelling classes
- o Associations
- o Labelling associations
- o Multiplicity
- o Composition and Aggregation
- o Attributes

2.2 Interpret a class diagram

2.3 Explain the use of generalisation in class diagrams

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3. Defining data requirements (15%: K3)

3.1 Define data modelling concepts
- o Metadata
- o Domain definitions

3.2 Explain data normalisation
- o Rationale for data normalisation
- o Unnormalised form
- o First normal form, second normal form and third normal form relations
- o Simple, compound, hierarchic and foreign keys
- o Third Normal Form data model

3.3 Identify aspects of data quality

4. Obtaining and recording data (10%: K3)

4.1 Identify sources of data: surveys, sampling exercises, records

4.2 Validate data models using a CRUD matrix

4.3 Validate data models against requirements using Data Navigation Paths

5. Analysing data for decision-making (25%: K4)

5.1 Explain and apply data analytics concepts
- o Obtaining the data set: context, source and lineage
- o Validating the data set: confirmation bias, sample size, outliers, consistency
- o Dataset calculations: counts, totals, averages, probabilities
- o Data relationships: regression analysis; correlation and causation; timeseries forecasting

5.2 Explain data cleansing: rationale and key steps

5.3 Interpret data using data analytics concepts

6. Protecting data (5%: K2)

6.1 Define data protection principles

6.2 Define aspects relating to online data and ethics

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Levels of Knowledge / SFIA Levels / Blooms

This course will provide candidates with the levels of difficulty / knowledge skill 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 explained in on the website www.bcs.org/levels. The levels of knowledge above will enable candidates to develop the following levels of skill to be able to operate at the following levels of responsibility (as defined within the SFIA framework) within their workplace:

Levels	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

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Question Weighting

Syllabus Area	Target number of questions (weighting)	Question Type
1 – Introduction to data	4 (10%)	Multiple choice
2 – Modelling data using Class Diagrams	14 (35%)	Multiple choice / scenario
3 – Defining data requirements	6 (15%)	Multiple choice / scenario
4 – Obtaining and recording data	4 (10%)	Multiple choice / scenario
5 – Analysing data for decision-making	10 (25%)	Multiple choice
6 – Protecting data	2 (5%)	Multiple choice
Total	**40 (100%)**	

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  - All Diploma courses have ONE 40 question mock exam paper
  - All Advanced Diploma courses have ONE 40 question sample paper
  - All Advanced Diploma courses have ONE 40 question mock exam paper
  - All graphics are professionally designed and suitable for anyone who is colour blind
  - All courses are professionally narrated – invaluable for auditory learners and anyone with dyslexia
- All courses are academically excellent – authored by BCS oral examiners/practitioners with decades of experience
- Engaging content – includes examples, games, exercises, multiple choice questions and case studies
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