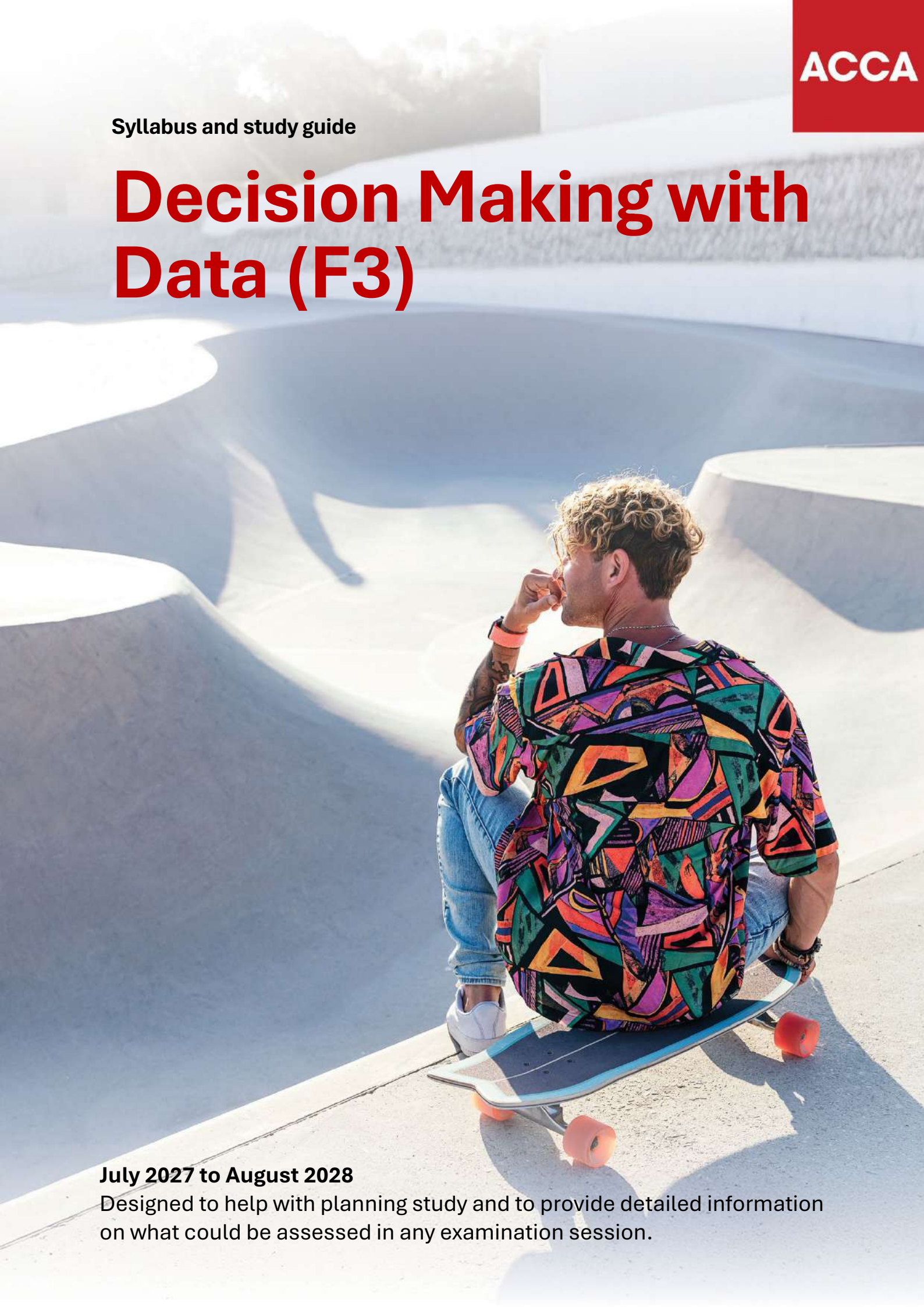
Syllabus and study guide

Decision Making with Data (F3)



July 2027 to August 2028

Designed to help with planning study and to provide detailed information on what could be assessed in any examination session.

Contents

1. Overall aim of the syllabus

The overall aim of the syllabus is to develop knowledge and understanding of data analysis and decision-making techniques which are used to support organisational and management decisions in a variety of business contexts.

2. Introduction to the syllabus

The syllabus for F3, Decision-Making with Data, starts by introducing candidates to data analysis and statistical techniques including sampling methods, how to summarise and analyse data, the use and application of linear functions, regression analysis and time series analysis. Candidates will also learn about the characteristics of big data and its main uses for organisations.

The next section of the syllabus focuses on short-term decision making and candidates will learn how to apply relevant costing principles, limiting factor analysis, cost-volume-profit (CVP) analysis and inventory management techniques to assist in decision making.

The syllabus concludes with long-term decision making and introduces candidates to the principles of compounding and discounting and a range of investment appraisal techniques to enable candidates to analyse different investment opportunities. For both short-term and long-term decision making candidates will be expected to make recommendations for action.

3. Main capabilities

On successful completion of this course of study, candidates should be able to:

- Understand the analytical and statistical techniques which are used to make and support decisions in business organisations.
- Identify data to be collected, prepare calculations using data analysis methods and describe key big data concepts.
- Prepare calculations using short-term and long-term decision-making principles and techniques to provide commercially viable recommendations to defined business matters.

4. Intellectual levels

This course of study assesses both knowledge and skills within an accounting or business context. The assessment of knowledge is denoted by a superscript ^{K} and the assessment of skills is denoted by the superscript ^{S} shown at the end of each learning outcome.

5. The syllabus

A Data analysis and statistical techniques

1. Sampling methods
2. Summarising and analysing data
3. Linear functions
4. Linear regression
5. Time series analysis
6. Big data

B Short-term decision making

1. Relevant costing principles
2. Limiting factor analysis
3. Cost-volume-profit (CVP) analysis
4. Inventory management techniques

C Long-term decision making

1. Compounding and discounting
2. Investment appraisal techniques

6. Detailed study guide

A Data analysis and statistical techniques

1. Sampling methods

a) Describe the two types of data: categorical (nominal and ordinal) and numerical (continuous and discrete).[K]

b) Describe sampling methods (random, systematic, stratified, multistage, cluster and quota).[K]

c) Identify an appropriate sampling method in a specific situation.[S]

Note: Derivation of random samples will not be examined.

2. Summarising and analysing data

a) Calculate the mean, mode and median for ungrouped data.[S]

b) Calculate measures of dispersion including the variance, standard deviation and coefficient of variation for ungrouped data.[S]

3. Linear functions

a) Describe the structure of linear functions and equations.[K]

b) Describe scatter diagrams and identify lines of best fit.[S]

c) Calculate, using the high-low method, the fixed and variable elements of semi-variable costs, including situations involving stepped fixed costs.[S]

d) Describe the advantages and disadvantages of using the high-low method to estimate the fixed and variable elements of total cost.[K]

4. Linear regression

a) Calculate the components of a linear function using regression analysis.[S]

b) Prepare forecasts of costs and revenues using linear regression.[S]

c) Describe the concepts of correlation coefficient and coefficient of determination.[K]

d) Calculate the correlation coefficient and the coefficient of determination.[S]

e) State the advantages and disadvantages of linear regression analysis.[K]

5. Time series analysis

a) Describe the principles of time series analysis and its components (trend, seasonal variation, cyclical variation and random variation).[K]

b) Calculate moving averages.[S]

c) Calculate the trend, including the use of linear functions.[S]

d) Prepare forecasts using the trend and seasonal variations (additive and multiplicative).[S]

e) State the advantages and disadvantages of time series analysis.[K]

6. Big data

a) Describe the five characteristics of big data (volume, variety, velocity, value and veracity).[K]

b) Describe the three types of big data: structured, semi-structured and unstructured.[K]

c) Describe the main uses of big data for organisations.[K]

B Short-term decision making

1. Relevant costing principles

a) Describe the concept of relevant costs.[K]

b) Calculate relevant costs in business decisions.[S]

Note: Asset replacement decisions and opportunity cost are excluded.

2. Limiting factor analysis

a) Describe the importance of the limiting factor concept.[K]

b) Calculate and identify the limiting factor in given situations.[S]

c) Calculate the optimal production solution when there is a single resource constraint.[S]

3. Cost-volume-profit (CVP) analysis

a) Calculate contribution per unit and the contribution to sales (C/S) ratio.[S]

b) Describe the concepts of break-even and the margin of safety.[K]

c) Calculate the break-even point and margin of safety using contribution per unit and C/S ratio.[S]

d) Describe the effect on the break-even point and margin of safety of changes in selling price and costs.[S]

e) Calculate the sales required to achieve a target profit using contribution per unit and C/S ratio.[S]

f) Identify key information from break-even and profit/volume charts for a single product or business.[S]

g) Describe the assumptions underpinning CVP analysis.[K]

4. Inventory management techniques

a) Calculate material input requirements making allowance for inventory changes and wastage.[S]

b) Describe the procedures required to monitor inventory and to minimise discrepancies and losses.[K]

c) Describe and calculate the costs of ordering and holding inventory.[S]

d) Calculate the economic order quantity (EOQ) and identify optimal order quantities.[S]

e) Describe and calculate inventory control levels (minimum, maximum, reorder) and free inventory.[S]

C Long-term decision making

1. Compounding and discounting

a) Describe and calculate simple and compound interest, and nominal and effective interest rates.[S]

b) Describe and calculate compounding and discounting.[S]

2 Investment appraisal techniques

a) Describe the distinction between cash flow and profit and the relevance of cash flow to investment appraisal.[K]

b) Describe the methods of investment appraisal (net present value (NPV), internal rate of return (IRR), return on capital employed (ROCE) and payback (discounted and non-discounted)).[K]

c) Calculate NPV, IRR, ROCE and payback (discounted and non-discounted).[S]

d) State the appropriate decision based upon the results of NPV, IRR, ROCE and payback calculations.[S]

7. Approach to examining the syllabus

The syllabus is assessed by a two-hour computer-based examination. Questions will assess all parts of the syllabus and will test knowledge and some comprehension or application of this knowledge.

The examination will consist of two sections.

Section A will contain 45 two-mark objective test questions (OTs).

Section B will contain 2 five-mark multi-task questions (MTQs) each of which will examine the **Short-term decision making** and **Long-term decision making** sections of the syllabus.

8. Guide to ACCA examination structure and delivery mode

The structure of examinations varies, depending on the level of the qualification.

The Foundations examinations contain 100% compulsory questions to encourage candidates to study across the breadth of each syllabus.

All Foundations examinations are assessed by two-hour computer-based examinations.

The pass mark for all Foundations examinations is 50%.

9. Guide to ACCA examination assessment

ACCA reserves the right to examine anything contained within the study guide at any examination session. This includes knowledge, techniques, principles, theories, and concepts as specified.

For specified financial accounting, audit and tax examinations, except if indicated otherwise, ACCA will publish examinable documents once a year to indicate exactly what regulations and legislation could potentially be assessed within identified examination sessions. Regulation issued, or legislation passed on or before 31 August annually, will be assessed from 1 September of the following year to 31 August of the year after. Please refer to the examinable documents for the exam (where relevant) for further information.

Regulation issued or legislation passed in accordance with the above dates may be examinable even if the effective date is in the future. The terms ‘issued’ or ‘passed’ relate to when regulation or legislation has been formally approved.

The term ‘effective’ relates to when regulation or legislation must be applied to entity transactions and business practices.

The study guide offers more detailed guidance on the depth and level at which the examinable documents will be examined. The study guide should therefore be read in conjunction with the examinable documents list, where applicable.

10. Learning hours and education recognition

As a member of the International Federation of Accountants, ACCA seeks to enhance the education recognition of its qualification on both national and international education frameworks, and with educational authorities and partners globally. In doing so, ACCA aims to ensure that its qualifications are recognised and valued by governments and regulatory authorities and employers across all sectors. To this end, ACCA qualifications are currently recognised on the educational frameworks in several countries. Please refer to your national education framework regulator for further information about recognition.