

Subject SP4

2025 Study Guide

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1 Introduction

This Study Guide has been created to help you navigate your way through Subject SP4. It contains useful information you will need before starting to study Subject SP4 for the 2025 exams. You may also find it useful to refer to throughout your studies.

Further information on study skills can be found on our website at [ActEd.co.uk](https://www.acted.co.uk).

Please read this Study Guide carefully before reading the Course Notes, even if you have studied for some actuarial exams before.

Before you start

When studying for the Institute and Faculty of Actuaries' exams, you may need:

- a copy of the **Formulae and Tables for Examinations of the Institute and Faculty of Actuaries, 2nd Edition (2002)** – these are referred to simply as the *Tables*
- a **scientific calculator** and/or **software package** to help with calculations.

The *Tables* are available from the Institute and Faculty of Actuaries' eShop. Please visit [actuaries.org.uk](https://www.actuaries.org.uk).

2 Subject sequencing and contents

2.1 Links to other subjects

Associateship Qualification

Fundamental principles of actuarial mathematics from Subject CM1 are used in the quantitative aspects of financing and valuing benefit arrangements in Subject SP4.

Understanding the nature of risks and how to manage these risks is vital for pension and other benefit arrangements. Actuarial Practice (Subject CP1) provides a fundamental background to different types of risk from an actuarial perspective and how these risks can be managed.

Fellowship Qualification

There are two subjects covering pensions and other benefits, Pensions and other Benefits Specialist Principles (Subject SP4) and Pensions and other Benefits Specialist Advanced (Subject SA4). Each subject develops a specific set of skills and knowledge needed by actuaries working in, or who wish to work in pensions.

Pensions and Other Benefits Specialist Advanced (Subject SA4) subject, further develops the principles from Subject SP4, providing a more in-depth understanding of pensions and other benefits to enable actuaries to work in more complex scenarios.

2.2 Subject contents

There are six parts to the Subject SP4 course. The parts cover related topics and are broken down into chapters. At the end of each part there is an assignment testing the material from that part.

The following table shows how the parts and chapters relate to each other. The final column shows how the chapters relate to the days of the regular tutorials. This table should help you plan your progress across the study session.

Part	Chapter	Title	No of pages	X Assignment	Tutorial – 3 days
1	1	Overview	9	X1	1
	2	Key stakeholders	25		
	3	Regulation	16		
	4	Disclosure and guidance	20		
	5	Benefit provision	42		
2	6	Scheme design – general	37	X2	1
	7	Scheme design – specifics	33		
	8	Scheme design – options	27		
	9	Risks and uncertainty	33		
	10	Financing benefits	42		
3	11	Sponsor covenant	26	X3	2
	12	Asset classes	29		
	13	Investment	36		
4	14	Models	24	X4	2
	15	Asset liability modelling	27		
	16	Funding methods	78		
5	17	Valuation data	22	X5	3
	18	Valuation assumptions	49		
	19	Valuation considerations	30		
6	20	Sources of surplus	25	X6	3
	21	Analysis of experience	22		
	22	Insurance	25		
	23	Discontinuance	25		
	24	Problem solving	8		
		Glossary	16		

3 Syllabus

The Syllabus for each subject is produced by the Institute and Faculty of Actuaries. It includes information to support the study of this subject. The Syllabus will guide you through what you need to learn, the application of learning as well as the skills that you need to develop.

Students can use the Syllabus as a guide for learning and development. We recommend that you use the Syllabus as an important part of your study.

3.1 Aim

The aim of Subject SP4 is to understand the main principles that are relevant to the provision of pensions and other benefits, including the design and financing of benefit arrangements, the methods of valuation, and the management and monitoring of risks that are relevant to benefit arrangements.

3.2 Topics and topic weightings

This subject covers the following topics:

- | | | |
|----|---|-------|
| 1. | Pension provision and general business environment | (20%) |
| 2. | Scheme design and financing | (20%) |
| 3. | Managing schemes and risks | (20%) |
| 4. | Models, valuations and setting assumptions | (30%) |
| 5. | Monitoring experience and the Actuarial Control Cycle | (10%) |

The topic weighting percentage noted alongside the topics is indicative of the volume of content of a topic within the subject and therefore broadly aligned to the volume of marks allocated to this topic in the examination. For example, if a topic is 20% of the subject then you can expect that approximately 20% of the total marks available in the examination paper will be available on that topic.

Students should ensure that they are well prepared across the entire syllabus and have an understanding of the principal terms used within the course.

Students will be expected to be able to apply knowledge and skills from across the syllabus topics to scenarios and questions proposed by the examiners and produce coherent solutions and actions, including:

- analysing complex problems in terms of actuarial, economic and financial factors to a level where appropriate analytical techniques may be used
- assessing the implications and relevance of such factors, integrating the results into a coherent whole
- evaluating the results critically in a wider context, drawing appropriate conclusions
- proposing solutions and actions, or a range of possible solutions and actions, based on this evaluation.

3.3 Objectives

The detailed syllabus objectives for Subject SP4 are given below. To the right of each objective are the chapter numbers in which the objective is covered in the ActEd course. The relevant individual syllabus objectives are also included at the start of each course chapter.

1 Pension provision and the general business environment (20%)

Develop an understanding of the concept of benefit provision, the key stakeholders involved, their roles and responsibilities, and the environment in which the benefits are provided.

- 1.1 Understand the roles and responsibilities of stakeholders in the provision of benefits: (Chapter 2)
- State and statutory bodies
 - employers or groups of employers
 - trustees or scheme managers
 - financial advisers for individuals
 - consultants and other professional advisors
 - individuals or groups of individuals.
- 1.2 Understand and compare the provision of benefits from State, public and private sector employers, and individuals. (Chapters 2, 3 & 5)
- 1.3 Identify the impact of the environment in which benefits are provided on stakeholders: (Chapters 3 & 4)
- different presentation and reporting of benefits and contributions
 - regulation and taxation
 - relevant professional guidance for actuaries or other professional advisers.
- 1.4 Understand the relevance, and impact of, sponsor covenants: (Chapter 11)
- methods by which sponsor covenant can be measured
 - integration of sponsor covenant with funding and investment.

2 Scheme design and financing (20%)

Explore the factors to consider when designing and financing pension and other benefit arrangements.

2.1 Understand the different ways in which providers may be able to finance the benefits to be provided: (Chapters 10, 12 & 22)

- timing of contributions (relative to when the benefits are due to be paid)
- forms and characteristics of investment that may be available (if benefits are funded)
- financial instruments, including contingent assets, that may be used to back benefit promises
- insurance products, including protection and annuity policies.

2.2 Understand the factors to consider to determine a suitable design for a pension scheme, or other benefits (such as social security benefits): (Chapters 6, 7 & 10)

- type of pension scheme (*eg* defined benefit, defined contribution, risk-sharing)
- governance requirements
- level and form of benefits and/or contributions
- method of financing the benefits
- how risk is shared between parties
- choice of assets (when benefits are to be funded and when assets are to be invested).

3 Managing schemes and risks (20%)

Understand potential risks affecting key aspects of benefit design and financing, as well as how these are managed and reported.

3.1 Understand the risks affecting: (Chapter 9)

- the level and incidence of benefits
- the level and incidence of contributions
- the level and incidence of return on assets
- the extent to which assets are exhausted during a member's lifetime
- the overall security of benefits

including risks which can, and cannot be mitigated through the use of insurance products.

- 3.2 Understand the factors that need to be considered when providing information to meet accounting standards: (Chapter 4)
- purpose of accounting standards
 - disclosure requirements
 - calculations of cost of benefit provision.
- 3.3 Identify the main factors to consider when setting appropriate terms and consent requirements in respect of the options provided to members of benefit arrangements, taking into account the risk and reward for all stakeholders. (Chapter 8)
- 3.4 Identify the factors to consider when setting the investment strategy of a benefit provider and how projection models may be used to develop appropriate strategies. (Chapters 13 & 15)

4 Models, valuations and setting assumptions (30%)

Principles of using actuarial models and setting assumptions, their use in valuing benefits and contributions, and the impacts on stakeholders.

- 4.1 Use relevant actuarial models for decision-making purposes: (Chapter 14)
- objectives of and requirements for building a model for the financial management of the provision of benefits
 - basic features of a model for projecting income and outgo
 - use these models for setting contributions, targeting benefit levels and assessing the return on assets
 - how sensitivity analysis of the results of the models can be used.
- 4.2 Use the principles underlying the determination of the funding method, valuation method and assumptions to value benefits and contributions: (Chapters 16, 18 & 19)
- types of information that may be available to help determine the assumptions and methods
 - requirements for prudence
 - objectives of stakeholders.

4.3 Determine values for assets, past and future benefits and future contribution requirements and perform calculations using the main methods: (Chapters 17, 18 & 19)

- data requirements
- reasons why assumptions and methods used may differ
- extent to which values should reflect investment / risk management strategy
- how to place values on guarantees and options
- sensitivity analysis and reasonableness checking.

4.4 Use relevant principles to determine discontinuance terms for benefits: (Chapter 23)

- rights and expectations of beneficiaries
- availability and selection of a method of provision of discontinuance benefits
- level of available assets.

5 Monitoring experience and the actuarial control cycle (10%)
(Chapters 20 & 21)

Explore how experience can be monitored and analysed in a quantifiable manner.

5.1 Identify the sources of surplus / deficit for a benefit provider and the factors that affect the application of this surplus / deficit.

4 Core Reading

This section explains the role of the Core Reading and how it links to the Syllabus, supplementary ActEd text and the examination.

4.1 Core Reading

The Core Reading has been produced by the Institute and Faculty of Actuaries. It supports students in their learning and development of this subject by providing information and explanation of the topics and objectives in the Syllabus.

The Core Reading is updated annually to reflect any changes to the Syllabus and current practice, as well as for continuous improvement.

The current version of the Core Reading is up-to-date as of 31 May 2024. It references the version of any legislation, standards, professional guidance, *etc* as of this date. Any known upcoming changes to the references are noted where relevant in the Core Reading.

Accreditation

The Institute and Faculty of Actuaries would like to thank the numerous people who have helped in the development of the material contained in the Core Reading.

Further reading

A list of additional resources to support candidate learning and development for this subject can be found on the Module pages on the Institute and Faculty of Actuaries' website:

actuaries.org.uk/curriculum/

4.2 Links to the Syllabus

Each part of the Core Reading relates directly to the Syllabus.

The relevant syllabus objectives are included at the start of each chapter for reference.

The Core Reading supports coverage of the Syllabus in helping to ensure that both depth and breadth are re-enforced.

4.3 Links to the examination

Examiners can set questions based on any area of the Syllabus within any examination sitting and will consider and draw from the Core Reading when setting examinations questions.

Students will be expected to apply the Core Reading to scenarios and questions proposed by the examiners.

The exams in April and September 2025 will be based on the Syllabus and Core Reading as at 31 May 2024. We recommend that you always use the up-to-date Core Reading to prepare for the exams.

Past papers indicate to students how the examiners apply the Core Reading. The Examiners' Reports provide further insight as to how students answered the questions and how marks were awarded.

4.4 ActEd text

The Core Reading deals with each syllabus objective and covers what is needed to pass the exam, and the Subject SP4 Course Notes include the Core Reading in full, integrated throughout the course.

However, the tuition material that has been written by ActEd enhances it by giving examples and further explanation of key points. Here is an excerpt from some ActEd Course Notes to show you how to identify Core Reading and the ActEd material. **Core Reading is shown in this bold font.**

In the example given above, the index *will* fall if the actual share price goes below the theoretical ex-rights share price. Again, this is consistent with what would happen to an underlying portfolio.

After allowing for chain-linking, the formula for the investment index then becomes:

$$I(t) = \frac{\sum_i N_{i,t} P_{i,t}}{B(t)}$$

where $N_{i,t}$ is the number of shares issued for the i th constituent at time t ;

$B(t)$ is the base value, or divisor, at time t .

This is
ActEd
text

This is Core
Reading

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These conditions remain in force after you have finished using the course.

5 Skills and assessment

5.1 Exam skills

In each examination, students will be expected to demonstrate, through their answers, that they have knowledge of, can apply and use higher order skills in this subject:

- Knowledge will be demonstrated through answering questions that assess understanding of that knowledge as well as through questions that ask for the application of relevant knowledge to scenarios.
- Application will be demonstrated through answering questions that assess the ability to identify and apply relevant concepts and skills to solve problems (both numerical and non-numerical).
- Higher order skills will be demonstrated through questions that will assess the ability to use relevant knowledge, concepts and skills to solve problems, draw appropriate conclusions, and make meaningful and appropriate comments on those conclusions.

In Subject SP4, the approximate split of assessment across the three skill types is:

- Knowledge – 25%
- Application – 50%
- Higher Order skills – 25%.

The Institute and Faculty of Actuaries use command verbs (such as 'Define', 'Discuss' and 'Explain') to help students to identify what the question requires. The examination can be composed of questions drawing from any part of the syllabus and using any command verb.

The Institute and Faculty of Actuaries has produced guidance on 'Command verbs used in the Associate and Fellowship examinations', to help students to understand what each command verb is asking them to do.

You can find the relevant document on the Institute and Faculty of Actuaries' website at:

actuaries.org.uk/qualify/prepare-for-your-exams

5.2 Assessment

Assessment will consist of one 3 hour 20 minute timed, online examination. This time includes reading time.

Students can expect to answer a number of questions of varying marks, using Microsoft Word to construct and type their answers.

5.3 Further information

The Institute and Faculty of Actuaries has produced a number of documents, which it advises students to read and understand. In particular, the:

- Qualification Handbook, which contains information on studying and preparing for exams, as well as available support and resources
- Examinations Handbook, which contains practical assistance on how to sit an Institute and Faculty of Actuaries' examination
- Assessment Regulations document, which includes rules on eligibility, entry and conduct during an online assessment.

The Qualification Handbook can be found at:

actuaries.org.uk/qualify/student-and-associate-exam-news/qualification-handbook

The Examinations Handbook and Assessment Regulations document can be found at:

actuaries.org.uk/qualify/my-exams/ifo-exams

IMPORTANT NOTE: These documents may be updated and re-published in the weeks leading up to each exam session. It is important that you keep up-to-date with any changes and developments.

6 ActEd study support

An overview of ActEd's products and services, and guidance on how to choose the best ones for you, can be found on our website at [ActEd.co.uk/productguide](https://www.acted.co.uk/productguide).

6.1 Summary of ActEd products and services

Detailed descriptions of all ActEd's products and services can be found on our website at [ActEd.co.uk](https://www.acted.co.uk). However, the specific products and services available for Subject SP4 include:

- Course Notes
- X Assignments – six assignments:
 - X1-X3: 80-mark tests (you are allowed 2¾ hours to complete these)
 - X4-X6: 100-mark tests (you are allowed 3¾ hours to complete these)
- Series X Marking
- Flashcards
- Sound Revision
- Revision Notes – six A5 booklets
- ASET (2020-23 papers) – four years of exam papers, *ie* eight sittings, covering the period April 2020 to September 2023
- Mini ASET – covering the April 2024 exam paper
- Mock Exam – one 100-mark test
- Additional Mock Pack (AMP) – two additional 100-mark tests
- Mock Exam Marking
- Marking Vouchers.

Products are generally available in both paper and eBook format. Visit [ActEd.co.uk](https://www.acted.co.uk) for full details about available eBooks, software requirements and restrictions.

6.2 Tuition

The following tutorials are typically available for Subject SP4:

- Regular Tutorials (three full days / six half days)
- Block Tutorials (three days).

Tutorials are typically available both face-to-face and live online.

Full details are set out in our *Tuition Bulletin*, which is available on our website at [ActEd.co.uk](https://www.acted.co.uk).

6.3 Questions and queries

From time to time you may come across something in the study material that is unclear to you.

Our online discussion forum at **ActEd.co.uk/forums** (or use the link from our home page at **ActEd.co.uk**) is dedicated to actuarial students so that you can get help from fellow students on any aspect of your studies from technical issues to study advice. ActEd tutors visit the site regularly to ensure that you are not being led astray and we also post other frequently asked questions from students on the forum as they arise.

If you are still stuck, then you can send queries by email to the Subject SP4 email address **SP4@bpp.com**, but we recommend that you try the forum first. We will endeavour to contact you as soon as possible after receiving your query but you should be aware that it may take some time to reply to queries, particularly when tutors are running tutorials. At the busiest teaching times of year, it may take us more than a week to get back to you.

If you have many queries on the course material, you should raise them at a tutorial or book a personal tuition session with an ActEd tutor. Please email **ActEd@bpp.com** for more details.

6.4 Feedback

If you find an error in the course, please check the corrections page of our website (**ActEd.co.uk/paper_corrections.html**) to see if the correction has already been dealt with. Otherwise, please send the details via email to the Subject SP4 email address **SP4@bpp.com**. Our tutors work hard to ensure that the courses are as clear as possible and free from errors.

ActEd also works with the Institute and Faculty of Actuaries to suggest developments and improvements to the Syllabus and Core Reading. If you have any comments or concerns about the Syllabus or Core Reading, these can be passed on via ActEd. Alternatively, you can send them directly to the Institute and Faculty of Actuaries' Examination Team by email to **memberservices@actuaries.org.uk**.

7 General information and support

7.1 Safeguarding

We want you to feel comfortable within our learning environment and safe in the knowledge that if you ever needed support, you know where to go.

If you need support, please contact BPP's Safeguarding team at safeguarding@bpp.com or for urgent concerns call 07464 542 636.

Additional information can be found at ActEd.co.uk/learningsupport.

7.2 BPP learning support

BPP's Learning Support team offers a wide range of support for all students who disclose a learning difficulty or disability. This support is accessible to all ActEd students free of charge.

Please contact BPP's Learning Support team at LearningSupport@bpp.com for more information.

Additional information can be found at ActEd.co.uk/learningsupport.

7.3 The Prevent Duty

The Prevent Duty is to protect people from radicalisation and being drawn into extremist views and terrorism. As a Government-regulated training provider, ActEd has a duty to ensure that our learners are well informed and stay safe, and to empower our students to know what to look for and when to report concerns.

Please report any concerns to a tutor or email safeguarding@bpp.com or for urgent concerns call 07464 542 636.

More information is available at:

- ActEd.co.uk/learningsupport
- officeforstudents.org.uk/advice-and-guidance/student-wellbeing-and-protection/counter-terrorism-the-prevent-duty/

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