

Subject SP2

2025 Study Guide

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1 Introduction

This Study Guide has been created to help you navigate your way through Subject SP2. It contains useful information you will need before starting to study Subject SP2 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

Understanding the nature of risks and how to manage these risks is vital for life insurance. 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 life insurance, Life Insurance Specialist Principles (Subject SP2) and Life Insurance Specialist Advanced (Subject SA2). Each subject develops a specific set of skills and knowledge needed by actuaries working in, or who wish to work in life insurance.

Life Insurance Principles (Subject SP2) provides an introduction to the main principles and knowledge required in life insurance, and how these principles can be applied in simple scenarios.

Life Insurance Specialist Advanced (Subject SA2) further develops the principles from Subject SP2, providing a more in depth understanding. In particular, it considers in much more detail the environment in which a life insurance company operates, which will include life insurance markets, regulation, legislation, taxation, financial management, monitoring and strategies.

2.2 Subject contents

There are six parts to the Subject SP2 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	Life insurance products 1	28	X1	1
	2	Life insurance products 2	22		
	3	Life insurance products 3	19		
	4	Life insurance products 4	40		
	5	Asset shares	20		
	6	With-profits surplus distribution 1	30		
	7	With-profits surplus distribution 2	31		
2	8	The general business environment 1	27	X2	
	9	The general business environment 2	26		
	10	Risk 1	24		
	11	Risk 2	34		
	12	Risk 3	14		
3	13	Unit pricing	22	X3	
	14	Models 1	18		
	15	Models 2	38		
	16	Product design	36		
4	17	Setting assumptions 1	45	X4	2
	18	Setting assumptions 2	19		
	19	Supervisory reserves & capital requirements 1	20		
	20	Supervisory reserves & capital requirements 2	32		
	21	Surrender values	28		
	22	Alterations	29		
5	23	Cost of guarantees and options	24	X5	3
	24	Reinsurance 1	28		
	25	Reinsurance 2	33		
	26	Underwriting	31		
	27	Policy data checks	14		
6	28	Investment	40	X6	
	29	Further risk management	26		
	30	Monitoring experience	52		
	31	Problem solving	42		
	32	Glossary	13		

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 SP2 is to understand in detail the main principles that are relevant to the provision of life insurance business, including the main products that are sold, the methods of valuation, and the main methods of actuarial management and control that are relevant to life insurance business.

3.2 Topics and topic weightings

This subject covers the following topics:

1.	Life insurance products and general business environment	(15%)
2.	Product design and specific features	(25%)
3.	Risks and risk management	(30%)
4.	Models and valuation	(15%)
5.	Monitoring experience and setting assumptions	(15%)

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 SP2 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. **Life insurance products and general business environment** (15%)

Understand the different types of life insurance products which are commonly available and the environment in which they are sold.

1.1 Describe the main types of life insurance products: (Chapters 1 to 4 and 23)

1.1.1 Main types of life insurance products that provide benefits on death, survival to a specified point in time or continued survival.

1.1.2 Life insurance product bases:

- conventional without-profits
- with-profits
- unit-linked
- index-linked.

1.1.3 Typical guarantees and options that may be offered on life insurance products.

1.2 Understand the link between the main types of life insurance products and the needs of the consumers, key risks for the insured and the purpose and key risks for the insurer. (Chapters 1 to 4)

1.3 Identify the impact of the general business environment on the management of a life insurance business: (Chapters 8 and 9)

- propensity of consumers to purchase products
- local culture
- methods of sale
- remuneration of sales channels
- types of expenses and commissions, including influence of inflation
- economic environment
- legal environment
- regulatory environment
- taxation regime
- professional guidance.

2. **Product design and specific features** (25%)

Understand the considerations which must be taken when designing life insurance products.

- 2.1 Demonstrate an understanding of and apply actuarial principles to the design of life insurance products: (Chapter 16)
 - 2.1.1 Factors to consider when determining a suitable design, in terms of premiums, benefits and charges, for a life insurance product.
 - 2.1.2 Determine a suitable design for a product in a given situation.
 - 2.1.3 Relative merits of different product designs.
- 2.2 Demonstrate an understanding of with-profits business management. (Chapters 5 to 7)
 - 2.2.1 Methods of distributing profits to with-profits policyholders.
 - 2.2.2 Main uses of asset shares and how they may be built up using a recursive formula.
- 2.3 Apply the principles of unit pricing for internal unit-linked funds. (Chapter 13)
- 2.4 Determine discontinuance and alteration terms for without-profits contracts: (Chapters 21 and 22)
 - 2.4.1 Principles of setting discontinuance and alteration terms.
 - 2.4.2 Different methods of determination of discontinuance and alteration terms.
 - 2.4.3 Extent to which these methods meet the principles in syllabus objective 2.4.1.
 - 2.4.4 Surrender values and alteration terms for conventional without-profits contracts using reserves or by equating policy values.

3. **Risks and risk management** (30%)

Understand the potential risks faced by a life insurance company and how these risks can be managed.

3.1 Assess how the following can be a source of risk to a life insurance company:
(Chapters 10 to 12)

- policy and other data
- mortality rates
- investment performance
- expenses, including the effect of inflation
- persistency
- mix of new business
- volume of new business
- guarantees and options
- competition
- actions of the board of directors
- actions of distributors
- failure of appropriate management systems and controls
- counterparties
- legal, regulatory and tax developments
- fraud
- aggregation and concentration of risk
- climate risks.

3.2 Demonstrate an understanding of reinsurance as a risk management technique:
(Chapters 24 and 25)

3.2.1 Purposes of reinsurance.

3.2.2 Different types and structures of reinsurance.

3.2.3 Factors that should be considered before taking out reinsurance.

- 3.3 Demonstrate an understanding of underwriting as a risk management technique: (Chapter 26)
- 3.3.1 Purposes of underwriting.
 - 3.3.2 Different approaches by which underwriting is applied.
 - 3.3.3 Factors that should be considered when determining the level of underwriting to use.
- 3.4 Demonstrate an understanding of asset-liability matching as a risk management technique: (Chapter 28)
- 3.4.1 Principles of investment for a life insurance company.
 - 3.4.2 Categorise life insurance liabilities into different types for asset-liability matching purposes.
 - 3.4.3 Asset-liability matching strategy for different types of liability.
- 3.5 Propose further ways of managing the risks in syllabus objective 3.1, including: (Chapters 7, 15, 27 and 29)
- policy data checks
 - choice of with-profits bonus method
 - capital management
 - expense control
 - policy retention activity
 - management of new business mix and volumes
 - management of options
 - systematic risk assessment and management strategies.
4. **Models and valuation** (15%)
- Have an understanding of how life insurance companies use models within their business.
- 4.1 Describe the main features of a life insurance model: (Chapter 14)
- 4.1.1 Objectives and basic features of a life insurance model.
 - 4.1.2 Stochastic and deterministic approaches.
 - 4.1.3 Use of sensitivity analysis.

- 4.2 Demonstrate an understanding of the different uses of actuarial models for decision-making purposes in life insurance: (Chapters 15 and 28)
- pricing products
 - developing investment strategy
 - projecting solvency
 - calculating embedded value.
- 4.3 Demonstrate an understanding of the methods used for determining the cost of options and guarantees: (Chapter 23)
- 4.3.1 Use of stochastic simulation and the use of option prices to determine the cost of an investment guarantee.
- 4.3.2 Assessment of the cost of simple mortality options.
- 4.4 Determine supervisory reserves and solvency capital requirements for a life insurance company: (Chapters 19 and 20)
- 4.4.1 How supervisory reserves and solvency capital requirements may be determined, including:
- market-consistent valuation
 - non-unit reserves
 - Value at Risk (VaR) capital assessment.
- 4.4.2 Interplay between the strength of the supervisory reserves and the level of solvency capital required.
- 4.4.3 Passive and active valuation approaches, including the valuation of assets.
5. **Monitoring experience and setting assumptions** (15%)

Consider the issues for life insurance companies in setting assumptions and monitoring experience for life insurance business.

- 5.1 Apply the principles of setting assumptions for life insurance business: (Chapters 15, 17 and 18)
- 5.1.1 For pricing life insurance contracts, including profit requirements.
- 5.1.2 For determining liabilities.
- 5.1.3 Why the assumptions used for supervisory reserves may be different from those used in pricing.
- 5.1.4 Principles of setting assumptions for determining embedded value.

- 5.2 Demonstrate the relevance of experience monitoring to a life insurance company: (Chapter 30)
 - 5.2.1 Why it is important for a life insurance company to monitor its experience.
 - 5.2.2 How to monitor actual mortality, persistency, expense and investment experience of a life insurance company, including the data required.
- 5.3 Demonstrate the relevance of analysis of surplus or profit: (Chapter 30)
 - 5.3.1 How to undertake an analysis of surplus and an analysis of embedded value profit.
 - 5.3.2 Use the results of such analyses.

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 SP2 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 SP2, 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/ifoa-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 SP2 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
- Online Classroom – over 50 tutorial units
- Flashcards
- Sound Revision
- Revision Notes – five 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 SP2:

- 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 SP2 email address **SP2@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 SP2 email address **SP2@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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