

# Subject SP6

## 2024 Study Guide

### Introduction

This Study Guide has been created to help you navigate your way through Subject SP6. It contains all the information you will need before starting to study Subject SP6 for the 2024 exams and you may also find it useful to refer to throughout your studies.

The guide is split into two parts:

- Part 1 contains specific information about Subject SP6.
- Part 2 contains general information about the Specialist Principles (SP) subjects.

**Please read this Study Guide carefully before reading the Course Notes**, even if you have studied for some actuarial exams before. While you may have already read (the majority of) the Part 2 material in previous subjects, the information in Part 1 is specific to this course.

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## 1.1 Subject SP6 – background and contents

### History

The Specialist Principles subjects are new subjects in the Institute and Faculty of Actuaries' 2024 Curriculum.

Subject SP6 is Derivatives

### Predecessors

The Specialist Principles subjects cover content that was previously in the equivalent Specialist Technical subjects. So:

- Subject SP6 replaced Subject ST6.

### Exemptions

In order to be eligible for an exemption in Subject SP6, you will need to have met the Institute and Faculty of Actuaries' requirements based on the current curriculum:

**[actuaries.org.uk/qualify/exam-exemptions](https://actuaries.org.uk/qualify/exam-exemptions)**

### Links to other subjects

- CM2 – Actuarial Mathematics 2
- CP1 – Actuarial Practice

### Contents

There are six parts to the Subject SP6 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.

<b>Part</b>	<b>Chapter</b>	<b>Title</b>	<b>No of pages</b>	<b>Tutorials 3 full days</b>
<b>1</b>	1	Background to derivatives	22	1
	2	Forwards and futures	53	
	3	Traded derivatives contracts	29	
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## 1.2 Subject SP6 – Syllabus and Core Reading

### Syllabus

The Syllabus for Subject SP6 is given here. To the right of each objective are the chapter numbers in which the objective is covered in the ActEd course.

#### **Aim**

The aim of the Financial Derivatives Principles subject is to instil in successful candidates the ability (at a higher level of detail and ability than in CM2) to understand different types of financial derivatives and their uses, the markets in which they are traded, methods of valuation of financial derivatives, and the assessment and management of risks associated with a portfolio of derivatives.

#### **Topics and topic weightings**

1	Derivative markets	(5%)
2	Derivative types and uses	(20%)
3	Derivative pricing and valuation methods, including interest rate models	(50%)
4	Management of derivatives	(25%)

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.

The weightings also have a correspondence with the amount of learning material underlying each syllabus topic. However, this will also reflect aspects such as:

- the relative complexity of each topic, and hence the amount of explanation and support required for it.
- the need to provide thorough foundation understanding on which to build the other objectives.
- the extent of prior knowledge which is expected.
- the degree to which each topic area is more knowledge or application based.

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.

### **Objectives**

#### 1 Derivative markets (5%)

Understand how different financial markets for derivatives operate, the main market participants (including their motives) and how settlement operates.

- 1.1 Awareness of the basic characteristics of derivatives markets
- 1.2 Describe the characteristics of exchange traded contracts and Over-The-Counter (OTC) contracts.
- 1.3 Understand the uses of forwards, future and options by different types of traders: hedgers, speculators and arbitrageurs.
- 1.4 Understand of how futures and options markets work.
- 1.5 Understand the operation of central counterparty clearing houses (CCPs) and the related regulatory environment.

#### 2 Derivative types and uses (20%)

Understand the different types of derivative contracts and their uses within different rates of interest, equity and exchange and understand how OTC contracts can be used to hedge type liability and risk.

- 2.1 Understand the payoffs of forwards and futures, calls and puts (American and European).
- 2.2 Understand forward and futures pricing.
- 2.3 Understand how derivatives can be used for various types of hedges.

2.4 Understand different types of derivative contracts and their uses, including:

- stock options
- currency options
- index options
- options on futures
- warrants
- convertibles

2.5 Understand the different types of interest rates and interest rate derivatives, including:

- Treasury rates
- LIBOR rates
- overnight index swap rates
- repo rates
- zero rates
- forward rates
- forward rate agreements
- interest rate futures
- Treasury bond futures
- interest rate swaps
- European swap options (swaptions)
- caps and caplets
- floors and floorlets
- Bermudan swaptions.

2.6 Understand the following exotic equity and foreign exchange derivatives:

- quanto options
- chooser options
- barrier options
- binary options
- lookback options
- Asian options
- exchange options
- basket options

- 2.7 Understand structured securities and OTC contracts, and how they can be used to hedge certain types of liability
- Separate Trading of Registered Interest and Principal of Securities (STRIPS)
  - Interest rate swaps
  - Interest rate swaptions
  - Index-linked bonds
  - Inflation swaps
  - Limited Price Indexation (LPI) swaps
  - LPI bonds.
- 2.8 Understand how structured securities and OTC contracts can be used to hedge non-economic risks such as longevity.
- 2.9 Understand credit derivatives, including Credit Default Swaps (CDSs)
- Collateralised Debt Obligations (CDOs)
  - Nth to default baskets
  - Total return swaps.
- 2.9.1 Understand the relationship between CDSs and corporate bonds, as shown by their relative credit spreads.
- 2.9.2 Understand the uses of credit derivatives.

### 3 Derivative pricing and valuation methods, including interest rate models (50%)

Explore, in detail, how derivatives are priced, the factors which should be taken into consideration and models used to determine them, including an understanding on how these models affect the outcome.

- 3.1 Understand the factors that affect option prices, including
- Stock price
  - Strike price
  - Term to expiry
  - Volatility
  - Risk-free rate
  - Dividends.

- 3.2 Use the binomial model to determine derivative prices and hedging strategies, including:
- sample paths.
  - filtrations.
  - the Binomial Representation Theorem.
  - conditional expectations.
  - previsible process.
  - self-financing portfolio strategies.
  - replicating strategies.
  - pricing under the martingale measure.
- 3.3 Use the Black-Scholes model to determine derivative prices and hedging strategies, including
- Brownian motion
  - Itô calculus
  - Itô's Lemma
  - statement of the Cameron–Martin–Girsanov Theorem
  - the concept of the Radon–Nikodym derivative
  - change of measure
  - statements of the Martingale Representation Theorem
  - continuous-time portfolio strategies
  - self-financing portfolios in continuous time
  - the Black–Scholes model
  - construction of replicating strategies using the martingale approach
  - the Black–Scholes formula for non-dividend-paying stocks
- 3.4 Use more complicated applications of the Black–Scholes model to determine derivative prices including:
- 3.4.1 Adapt the martingale approach to price of foreign exchange options and options on stock indices paying dividends continuously
- 3.4.2 Understand the derivation of the Black–Scholes–Merton partial differential equation.
- 3.4.3 Understand the role of the market price of risk in the transfer between the real-world and the risk-neutral probability measures.



- 3.4.4 Understand the role of the volatility parameter in the valuation of options, including:
- calculation of implied volatility from option prices.
  - estimation of volatility from historical time series or other market indices (e.g. the VIX index).
  - the 'smile' effect and volatility surfaces.
- 3.4.5 Understand approaches to value options on discrete dividend-paying securities.
- 3.5 Use alternative numerical methods to determine derivative prices and hedging strategies, including:
- 3.5.1 Numerical methods to determine equity and foreign exchange derivative prices and hedging strategies:
- Binomial and trinomial trees
  - Monte Carlo techniques
  - Finite difference methods.
- 3.5.2 Different methods to determine prices of American options, including Monte Carlo simulation using the least squares (Longstaff–Schwartz) approach.
- 3.6 Calculate the price of interest rate derivatives, including the use of the Black model.
- 3.6.1 Know how to determine:
- The yield curve, zero rates, forward rates and bond prices
  - The relationship between forward rates and futures rates
  - The value of interest rate swaps.
- 3.6.2 Understand the relationship between swap quotes and swap zero rates.
- 3.6.3 Apply the Black model to price and value:
- Bond options
  - Caps and floors
  - European swaptions.
- 3.6.4 Evaluate the assumptions underlying Black's model.

- 3.7 Understand models of the term structure of interest rates including:
  - 3.7.1 Difference between equilibrium and no-arbitrage models.
  - 3.7.2 Hull and White model for the term structure of interest rates.
  - 3.7.3 Differences between the Hull and White model and the Vasicek and Cox-Ingersoll–Ross models.
  - 3.7.4 Use of the risk-neutral approach to pricing, understand and apply relevant numerical techniques to value an interest rate derivative, including:
  - 3.7.5 Valuation methods for an interest rate derivative using an appropriate forward measure and zero-coupon bond
  - 3.7.6 Role of the market price of risk and changes of numeraire in the dynamics of term structure models.
  - 3.7.7 Interest rate models in a multifactor setting.
  - 3.7.8 Characteristics of the Heath, Jarrow and Morton (HJM) and Brace Gatarek Musiela (BGM) Model.
  - 3.7.9 Use of the BGM Model to price caps and swaptions.
  - 3.7.10 Use of Black’s model in the calibration of the BGM Model, and problems with this approach.
- 3.8 Use different approaches to price property swaps.
- 3.9 Understand the pricing of credit derivatives including:
  - 3.9.1 Pricing a credit default swap.
  - 3.9.2 The role of correlation in pricing credit derivatives

#### 4 Management of derivatives (25%)

Methods used by both investors in derivatives and providers of derivatives to manage the risks which come with these instruments.

- 4.1 Understand how derivatives are used by investors.
  - 4.1.1 How derivatives help investors meet their objectives.
  - 4.1.2 How derivatives change in the risk profile of a portfolio.
  - 4.1.3 Practical issues and limitations arising from derivative use.
  - 4.1.4 Compare alternative strategies.

- 4.2 Understand how to hedge derivatives.
  - 4.2.1 Calculate the partial derivatives (the Greeks).
  - 4.2.2 Use of the Greeks in hedging individual derivatives and portfolios of derivatives.
  - 4.2.3 How option prices and Greeks change in relation to underlying variables.
  - 4.2.4 Manage portfolios of derivatives using scenario analysis.
  - 4.2.5 Risk management characteristics of a given derivative, including exotic contracts.
  - 4.2.6 Hedging of interest rate derivatives with respect to underlying parameters (the Greeks).
  - 4.2.7 Delta hedging techniques in relation to credit default swaps.
- 4.3 Understand what is meant by basis risk and its impact on hedging strategies.
- 4.4 Understand the risks that arise in the use of derivatives and how to manage them, including.
  - 4.4.1 Market risk, credit (or counterparty) risk and liquidity risk.
  - 4.4.2 Risks that affect the use of derivatives and how these risks may be handled.
  - 4.4.3 Possible methods for establishing Value-at-Risk (on a portfolio).
  - 4.4.4 Weaknesses of the Value-at-Risk measure.
  - 4.4.5 Use and limitations of credit ratings.
  - 4.4.6 Simple techniques for measuring and managing credit (or counterparty) risk on derivatives, including:
    - International Swaps and Derivatives Association (ISDA) agreements.
    - collateral management.
  - 4.4.7 Risks that arise in the use of specific types of derivative.
- 4.5 Understand how special purpose vehicles can be used as part of a mechanism for risk transfer, including the role of a credit enhancement agency.

## Core Reading

In contrast to the Core Reading for most other subjects, the Core Reading for this subject consists largely of details of which sections of the Textbooks to study, but is augmented in places by additional material. The Subject SP6 Course Notes include the Core Reading in full, after the ActEd chapters.

The Course Notes cover the complete Subject SP6 syllabus and so cover the same topics as the separate Core Reading and relevant sections of the Textbooks. The Notes, together with the Textbooks, cover what we believe you need to know for the exam. In places, the Textbooks will go into more detail than our Course Notes, but in other places we give more explanation.

## Textbooks

The Core Reading makes extensive reference to the following two Textbooks:

- *“Options, Futures, and Other Derivatives”* (eleventh edition)

by Hull

ISBN-10: 1-292-41065-5

ISBN-13: 978-1-292-41065-4

- *“Financial Calculus – An introduction to derivative pricing”*

by Baxter & Rennie

ISBN: 0-521-55289-3

These are both well-established derivatives textbooks, which you will want to have available during your studies, although neither of them has been written specifically with actuarial students in mind.

## 1.3 Subject SP6 – summary of ActEd products

The following products are available for Subject SP6:

- Course Notes
- X Assignments – six assignments:
  - X1-X3: 80-mark tests (you are allowed 2 hours to complete these)
  - X4-X6: 100-mark tests (you are allowed 3¼ hours to complete these)and X Assignment marking (Series Marking and Marking Vouchers)
- 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.

The following tutorials are typically available for Subject SP6:

- regular tutorials (three days)
- block tutorials (three days).

Products are generally available in both paper and eBook format. Visit **ActEd.co.uk** for full details about available eBooks, software requirements and restrictions. ActEd is unable to provide eBook versions of the textbook, however these may be available from other bookstores.

## 1.4 Subject SP6 – study skills and assessment

### Exam skills

#### *Exam question skill levels*

In the Specialist Principles subjects, the approximate split of assessment across the three skill types is:

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

### Assessment

The Specialist Principles examinations are in the form of 3¼-hour paper-based examinations.

## 1.5 Subject SP6 – frequently asked questions

**Q:** *What should I do if I discover an error in the course?*

**A:** If you find an error in the course, please check our website at:

**[ActEd.co.uk/paper\\_corrections.html](https://www.acted.co.uk/paper_corrections.html)**

to see if the correction has already been dealt with. Otherwise please send details via email to **[SP6@bpp.com](mailto:SP6@bpp.com)**.

**Q:** *Who should I send feedback to?*

**A:** We are always happy to receive feedback from students, particularly details concerning any errors, contradictions or unclear statements in the courses.

If you have any comments on this course in general, please email to **[SP6@bpp.com](mailto:SP6@bpp.com)**.

If you have any comments or concerns about the Syllabus or Core Reading, these can be passed on to the Institute and Faculty of Actuaries via ActEd. Alternatively, you can send them directly to the Institute and Faculty of Actuaries' Examination Team by email to **[education.services@actuaries.org.uk](mailto:education.services@actuaries.org.uk)**.

## 2.1 General information and support

### Before you start

#### Institute and Faculty of Actuaries

The Institute and Faculty of Actuaries has produced a Qualification Handbook containing important information and guidance on:

- requirements for qualifying as an Associate or Fellow
- preparing for the exams, including how to book them
- the regulations, policies and procedures to be aware of while studying
- the range of support and resources available to students when they join the Institute and Faculty of Actuaries.

The Institute and Faculty of Actuaries advises students to ensure they read through the Qualification Handbook.

The Qualification Handbook can be found at:

**[actuaries.org.uk/qualify/student-and-associate-exam-news/qualification-handbook](https://actuaries.org.uk/qualify/student-and-associate-exam-news/qualification-handbook)**

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

- a copy of the **Formulae and Tables for Examinations of the Faculty of Actuaries and the Institute 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://actuaries.org.uk)**.

#### BPP learning support

BPP's Learning Support team offers a wide range of support for all students who disclose a learning difficulty or disability, including sensory difficulties, mobility difficulty, ADHD, Asperger Syndrome, mental health difficulties, dyslexia, dyspraxia and general health problems. This support is accessible to all ActEd students free of charge.

This support includes:

- accessible and inclusive learning facilities
- a dedicated team that provides information, advice, guidance and support.

Please contact the Learning Support team at **[LearningSupport@bpp.com](mailto:LearningSupport@bpp.com)** for more information.



## Safeguarding

Safeguarding means protecting people's health, wellbeing and human rights, and enabling them to live free from harm, abuse and neglect.

For ActEd, safeguarding is recognising when someone needs support to help them achieve their learning goals while maintaining their safety, both face-to-face and online.

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

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

## 2.2 How to use the SP6 Course Notes

The SP6 course has a significantly different format from most of the other SP subjects. Rather than being based solely on Core Reading written specifically to cover the syllabus objectives, there are two Textbooks that you must also study. These are:

- “Options, Futures, and Other Derivatives” (11<sup>th</sup> edition) by Hull
- “Financial calculus – An introduction to derivative pricing” by Baxter and Rennie

You might have received these textbooks with your Combined Materials Pack or you might have chosen to purchase them separately, in which case you should do so as soon as possible.

The Core Reading is included at the end of the ActEd Course Notes, rather than being interspersed throughout the chapters. It is split into 19 units, with references to the relevant sections of the Textbooks and to any other additional material.

Each of our 17 ActEd chapters starts with a list of the syllabus objectives covered. This is followed by a list of the relevant sections of the Textbooks and any relevant Core Reading.

As with most exams, coverage of past papers is crucial to pass Subject SP6. Each of chapters 2 to 17 of our 17 ActEd chapters concludes with one or two exam-style questions from past ST6 exams. Many of the solutions to these questions provide an example of the comprehensive solutions and advice on exam technique that you would expect to receive in our SP6 Acted Solutions and Exam Technique (ASET) pack, which usually 8 recent ST6 papers.

In addition many of the other past ST6 exam questions are covered in our Q&A bank. Details of which particular questions are covered, together with descriptions on the question content of past exam questions and Q&A bank questions, are provided at the end of each chapter. This Questions section at the end of each chapter is followed by a checklist, which lists all the key things you should have learned whilst studying the chapter.

We suggest you work through each of the chapters of the ActEd Course Notes in turn. To get the maximum benefit from each chapter you should proceed as follows:

1. Read the syllabus objective.
- 2a. Study the material listed in the “Reading / Topics covered” table.
- 2b. Study the Course Notes, which cover the syllabus objectives in a fairly concise style and include extra explanation of some of the key topics.

*The Course Notes have been designed so that you can perform steps 2a and 2b in whichever order you wish. Our Course Notes do not rely on you having read the other material first.*

3. As you study, pay particular attention to the syllabus objectives. You may wish to annotate the tuition material and possibly make your own notes.
4. Work your way through the exam-style questions at the end of each chapter.

5. Work your way through the Q&A bank and the other past paper questions that are signposted at the end of each chapter.
6. Work your way through the Chapter Checklist carefully. If there are any items that you can't remember covering in the Course Notes, read the relevant section of the notes again to refresh your memory.

We hope you find the SP6 Course interesting and rewarding.

## 2.3 ActEd study support

This section gives a description of the products offered by ActEd.

Successful students tend to undertake three main study activities:

1. *Learning* – initial study and understanding of subject material
2. *Revision* – learning subject material and preparing to tackle exam-style questions
3. *Rehearsal* – answering exam-style questions, culminating in answering questions at exam speed.

Different approaches suit different people. For example, you may like to revise material gradually over the months running up to the exams or you may do your revision in a shorter period just before the exams. Also, these three activities will almost certainly overlap.

We offer a flexible range of products to suit you and let you control your own learning and exam preparation. The following table shows the products that we produce. Not all products are available for all subjects.

LEARNING	LEARNING & REVISION	REVISION	REVISION & REHEARSAL	REHEARSAL
Course Notes	X Assignments  Combined Materials Pack (CMP)  X Assignment Marking  Tutorials  Online Classroom	Flashcards	Revision Notes  ASET	Mock Exam  Mock Exam Marking

The products and services are described in more detail below.

## **‘Learning’ products**

### ***Course Notes***

The Course Notes will help you develop the basic knowledge and understanding of principles needed to pass the exam. They incorporate the complete Core Reading and include full explanation of all the syllabus objectives, with worked examples and questions (including some past exam questions) to test your understanding.

Each chapter includes:

- the relevant syllabus objectives
- a chapter summary
- practice questions with full solutions.

## **‘Learning & revision’ products**

### ***X Assignments***

The Series X Assignments are assessments that cover the material in each part of the course in turn. They can be used to both develop and test your understanding of the material.

The X Assignments come with full marking schedules. We are happy to mark your scripts, but marking must be purchased separately.

### ***Combined Materials Pack (CMP)***

The Combined Materials Pack (CMP) comprises the Course Notes, the Series X Assignments and a Mock Exam.

The CMP Upgrade can be downloaded free of charge from our website at **ActEd.co.uk**.

### ***X Assignment Marking***

We are happy to mark your attempts at the X assignments. Marking is not included with the Assignments or the CMP and you need to order it separately.

**IMPORTANT NOTE: You must submit your script on our virtual learning environment, ‘The Hub’, in the format detailed in your assignment instructions. You will also be able to download your marked script, including marker feedback, from The Hub, as well as being given the opportunity to provide comments on the quality of the marking.**

Don’t underestimate the benefits of attempting and submitting assignments for marking:

- Question practice during this phase of your study gives an early focus on the end goal of answering exam-style questions.
- You’re incentivised to keep up with your study plan and get a regular, realistic assessment of your progress.
- Objective, personalised feedback from a high quality marker will highlight areas on which to work and help with exam technique.

In a recent study, we found that students who attempt more than half the assignments and get them marked have significantly higher pass rates.

There are two different types of marking product: Series Marking and Marking Vouchers.

### ***Series Marking***

Series Marking applies to a specified subject, session and student. If you purchase Series Marking, you will **not** be able to defer the marking to a future exam sitting or transfer it to a different subject or student.

We typically send out full solutions with the Series X Assignments. However, if you order Series Marking at the same time as you order the Series X Assignments, you can choose whether or not to receive a copy of the solutions in advance. If you choose not to receive them with the study material, you will be able to download the solutions from The Hub when your marked script is returned (or following the final deadline date if you do not submit a script).

If you are having your attempts at the assignments marked by ActEd, you should submit your scripts regularly throughout the session, in accordance with the schedule of recommended dates set out on our website at **ActEd.co.uk**. This will help you to pace your study throughout the session and leave an adequate amount of time for revision and question practice.

The recommended submission dates are realistic targets for the majority of students. Your scripts will be returned more quickly if you submit them well before the final deadline dates.

Any script submitted *after* the relevant final deadline date will not be marked. It is your responsibility to ensure that we receive scripts in good time.

### ***Marking Vouchers***

Marking Vouchers give the holder the right to submit a script for marking at any time, irrespective of the individual assignment deadlines, study session, subject or student.

Marking Vouchers can be used for any assignment. They are valid for four years from the date of purchase and can be refunded at any time up to the expiry date.

Although you may submit your script with a Marking Voucher at any time, you will need to adhere to the explicit Marking Voucher deadline dates to ensure that your script is returned before the date of the exam. The deadline dates are provided on our website at **ActEd.co.uk**.

### ***Tutorials***

Our tutorials are specifically designed to develop the knowledge that you will acquire from the course material into the higher-level understanding that is needed to pass the exam.

We run a range of different tutorials including face-to-face tutorials at various locations, and Live Online tutorials. Full details are set out in our *Tuition Bulletin*, which is available on our website at **ActEd.co.uk**.

### ***Regular and Block Tutorials***

In preparation for these tutorials, we expect you to have read the relevant part(s) of the Course Notes before attending the tutorial so that the group can spend time on exam-style questions and discussion to develop understanding rather than basic bookwork.

You can choose *one* of the following types of tutorial:

- **Regular Tutorials** spread over the session.
- a **Block Tutorial** held two to eight weeks before the exam.

### **ActEd Solutions with Exam Technique (ASET)**

The ActEd Solutions with Exam Technique (ASET) contains our solutions to eight past exam papers, plus comment and explanation. In particular, it highlights how questions might have been analysed and interpreted so as to produce a good solution with a wide range of relevant points. This will be valuable in approaching questions in subsequent examinations.

### **‘Rehearsal’ products**

#### ***Mock Exam***

The Mock Exam is a 100-mark mock exam paper that provides a realistic test of your exam readiness.

It is based on the Mock Exam from last year but it has been updated to reflect any changes to the Syllabus, Core Reading and examination format.

The Mock Exam comes with a full marking schedule, and is available with or without marking (see below). We are happy to mark your scripts, but marking must be purchased separately.

#### ***Additional Mock Pack (AMP)***

The Additional Mock Pack (AMP) consists of two further 100-mark mock exam papers – Mock Exam 2 and Mock Exam 3. This is ideal if you are retaking and have already sat the Mock Exam, or if you just want some extra question practice.

Mock Exam 2 and Mock Exam 3 come with full marking schedules, and are available with or without marking (see below). We are happy to mark your scripts, but marking must be purchased separately.

#### ***Mock Marking***

We are happy to mark your attempts at the mock exams. The same general principles apply as for the X Assignment Marking. In particular:

- Mock Exam Marking applies to a specified subject, session and student
- Marking Vouchers can be used for each mock exam paper. Marking vouchers have to be used for marking the AMP exam papers and can be used for marking the Mock Exam.

Recall that:

- marking is not included with the products themselves and you need to order it separately
- you should submit your script via The Hub in the format detailed in the mock exam instructions
- you will be able to download the feedback on your marked script, the solutions if you have Mock Exam Marking, and provide comments on the quality of the marking via The Hub.



## 2.4 Study skills and assessment

### *The Subject SP exams*

It is important to recognise that the SP subject exams are very different from the Core Principles subject exams in both the nature of the material covered and the skills being examined.

Both the Core Reading and the exam papers themselves are generally much less numerical and more 'wordy' than the Core Principles subjects. The exam will primarily require you to explain a particular point in words and sentences, rather than to manipulate formulae or perform calculations. Numerical questions typically account for only a small part of each exam paper. If you haven't sat this type of exam for some time, you need to start practising again now. Many students find that it takes time to adjust to the different style of the SP subject exam questions. As ever, practice is the key to success.

The aim of the exams is to test your ability to apply your knowledge and understanding of the key principles described in the Core Reading to specific situations presented to you in the form of exam questions. Therefore your aim should be to identify and understand the key principles, and then to practise applying them. You will also need to be thoroughly familiar with the Core Reading to score well and quickly on any knowledge-based questions.

### **Study skills**

#### *Overall study plan*

We suggest that you develop a realistic study plan, building in time for relaxation and allowing some time for contingencies. Be aware of busy times at work, when you may not be able to take as much study leave as you would like. Once you have set your plan, be determined to stick to it. You don't have to be too prescriptive at this stage about what precisely you do on each study day. The main thing is to be clear that you will cover all the important activities in an appropriate manner and leave plenty of time for revision and question practice.

Aim to manage your study so as to allow plenty of time for the concepts you meet in this course to 'bed down' in your mind. Most successful students will probably aim to complete the course at least six weeks before the exam, thereby leaving a sufficient amount of time for revision. By finishing the course as quickly as possible, you will have a much clearer view of the *big picture*. It will also allow you to structure your revision so that you can concentrate on the important and difficult areas of the course.

You can also try looking at our discussion forum, which can be accessed at [ActEd.co.uk/forums](https://www.acted.co.uk/forums) (or use the link from our home page at [ActEd.co.uk](https://www.acted.co.uk)). There are some good suggestions from students on how to study.

#### *Study sessions*

Only do activities that will increase your chance of passing. Try to avoid including activities for the sake of it and don't spend time reviewing material that you already understand. You will only improve your chances of passing the exam by getting on top of the material that you currently find difficult.

In particular, you may already be familiar with the content of some of the chapters (from the Core Principles (CS, CM or CB subjects), Subject CP1 or other SP subjects). Try to cover these chapters quickly to give yourself more time on the material with which you are less comfortable. Where chapters refer back to material from the Core Principles subjects, you don't have to follow these links up unless you are feeling curious or clueless.

Ideally, each study session should have a specific purpose and be based on a specific task, *eg 'Finish reading Chapter 3 and attempt Practice Questions 1.4, 1.7 and 1.12'*, as opposed to a specific amount of time, *eg 'Three hours studying the material in Chapter 3'*.

Try to study somewhere quiet and free from distractions (*eg* an area at home dedicated to study). Find out when you operate at your peak, and endeavour to study at those times of the day. This might be between *8am* and *10am* or could be in the evening. Take short breaks during your study to remain focused – it's definitely time for a short break if you find that your brain is tired and that your concentration has started to drift from the information in front of you.

### **Order of study**

We suggest that you work through each of the chapters in turn. To get the maximum benefit from each chapter you should proceed in the following order:

1. Read the syllabus objectives. These are set out in the box at the start of each chapter.
2. Read the Chapter Summary at the end of each chapter. This will give you a useful overview of the material that you are about to study and help you to appreciate the context of the ideas that you meet.
3. Study the Course Notes in detail, annotating them and possibly making your own notes. Try the self-assessment questions as you come to them. As you study, pay particular attention to the listing of the syllabus objectives and to the Core Reading.
4. Read the Chapter Summary again carefully. If there are any ideas that you can't remember covering in the Course Notes, read the relevant section of the notes again to refresh your memory.
5. Attempt (at least some of) the Practice Questions that appear at the end of the chapter.
6. Think about what specifically you might want to include from that chapter in the reference materials that you choose to have to hand during the exam. For example, you might want to put together some easy-reference lists of key concepts or idea generation prompts that can be referred to quickly and conveniently.

It's a fact that people are more likely to absorb something if they review it several times. So, do look over the chapters you have studied so far from time to time. It is useful to re-read the Chapter Summaries or to try the Practice Questions again a few days after reading the chapter itself. It's a good idea to annotate the questions with details of when you attempted each one. This makes it easier to ensure that you try all of the questions as part of your revision without repeating any that you got right first time.

Once you've read the relevant part of the notes and tried a selection of questions from the Practice Questions (and attended a tutorial, if appropriate) you should attempt the corresponding assignment. If you submit your assignment for marking, spend some time looking through it carefully when it is returned. It can seem a bit depressing to analyse the errors you made, but you will increase your chances of passing the exam by learning from your mistakes. The markers will try their best to provide practical comments to help you to improve.

To be really prepared for the exam, you should not only be fully familiar with and know and understand the Core Reading but also be aware of what the examiners will expect. Your revision programme should include plenty of question practice so that you are aware of the typical style, content and marking structure of exam questions. You should attempt as many past exam questions as you can.

### **Active study**

Here are some techniques that may help you to study actively.

1. Don't believe everything you read. Good students tend to question everything that they read. They will ask 'why, how, what for, when?' when confronted with a new concept, and they will apply their own judgement. This contrasts with those who unquestioningly believe what they are told, learn it thoroughly, and reproduce it (unquestioningly?) in response to exam questions.
2. Another useful technique as you read the Course Notes is to think of possible questions that the examiners could ask. This will help you to understand the examiners' point of view and should mean that there are fewer nasty surprises in the exam. Use the Syllabus to help you make up questions.
3. Annotate your notes with your own ideas and questions. This will make you study more actively and will help when you come to review and revise the material. These notes may also be useful to refer to in the exam. Do not simply copy out the notes without thinking about the issues.
4. As you study each chapter, condense the *key* points (not whole chunks of text) on to a double side of A4 or less. This is essential as otherwise, when you come to revision, you will end up having to re-read the whole course again, and there won't be time.
5. Try to use memory aids, such as mind maps and acronyms, to remind you of the material when you come back to it later and help you to digest it further. Such aids may also be useful to have in your reference materials.
6. Attempt the questions in the notes as you work through the course. Produce your answer before you refer to the solution.
7. Attempt other questions and assignments on a similar basis, *ie* produce your answer before looking at the solution provided. Attempting the assignments under timed conditions has some particular benefits:

It forces you to think and act in a way that is similar to how you will behave in the exam.

- When you have your assignments marked it is *much* more useful if the marker's comments can show you how to improve your performance under timed conditions than your performance when you are under no time pressure.
  - The knowledge that you are going to do an assignment under timed conditions and then submit it (however good or bad) for marking can act as a powerful incentive to make you study each part as well as possible.
  - It is also quicker than trying to produce perfect answers.
8. Sit a mock exam four to six weeks before the real exam to identify your weaknesses and work to improve them. You could use a mock exam written by ActEd or a past exam paper. Ensure that you have your reference materials handy, as you plan to in the actual exam, so that you can practise finding what you need in them quickly and efficiently. (You might even be able to add to / modify your reference materials to increase their usefulness.)

You can find further information on how to study in the Institute and Faculty of Actuaries' Qualification Handbook, which you can download from their website at:

**[actuaries.org.uk/qualify/student-and-associate-exam-news/qualification-handbook](https://www.actuaries.org.uk/qualify/student-and-associate-exam-news/qualification-handbook)**

## Revision and exam skills

### ***Revision skills***

You will have sat many exams before and will have mastered the exam and revision techniques that suit you. However it is important to note that due to the high volume of work involved in Subject SP6, it is not possible to leave all your revision to the last minute. Students who prepare well in advance have a better chance of passing the exam on the first sitting.

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

There are many sources of exam-style questions. You can use past exam papers, the Practice Questions at the end of each chapter (which include many past exam questions), assignments, mock exams, the Revision Notes and ASET.

### ***Exam question skill levels***

Exam questions are not designed to be of similar difficulty. The Institute and Faculty of Actuaries specifies different skill levels at which questions may be set.

Questions may be set at any skill level:

- Knowledge – demonstration of a detailed knowledge and understanding of the topic
- Application – demonstration of an ability to apply the principles underlying the topic within a given context
- Higher Order – demonstration of an ability to perform deeper analysis and assessment of situations, including forming judgements, taking into account different points of view, comparing and contrasting situations, suggesting possible solutions and actions, and making recommendations.

### ***Command verbs***

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](https://actuaries.org.uk/qualify/prepare-for-your-exams)**

### **Past exam papers**

You can download past exam papers and Examiners’ Reports from the Institute and Faculty of Actuaries’ website at:

**[actuaries.org.uk/qualify/prepare-for-your-exams](https://actuaries.org.uk/qualify/prepare-for-your-exams)**

## 2.5 Queries and feedback

### Questions and queries

From time to time you may come across something in the study material that is unclear to you. The easiest way to solve such problems is often through discussion with friends, colleagues and peers – they will probably have had similar experiences whilst studying. If there's no-one at work to talk to then use our discussion forum at **ActEd.co.uk/forums** (or use the link from our home page at **ActEd.co.uk**).

Our online forum 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. You could also use it to get ideas for revision or for further reading around the subject that you are studying. ActEd tutors will 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 relevant subject email address (see Section 1.5), 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 away from the office 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. Information about personal tuition is set out in our current brochure. Please email **ActEd@bpp.com** for more details.

### 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 details via email to the relevant subject email address (see Section 1.5).

Each year our tutors work hard to improve the quality of the study material and to ensure that the courses are as clear as possible and free from errors. We are always happy to receive feedback from students, particularly details concerning any errors, contradictions or unclear statements in the courses. If you have any comments on this course please email them to the relevant subject email address (see Section 1.5).

Our tutors also work 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**.