

Subject CP1

2021 Study Guide

Introduction

This Study Guide has been created to help you navigate your way through Subject CP1. It contains all the information you will need before starting to study Subject CP1 for the 2021 exams and you may also find it useful to refer to throughout your Subject CP1 journey.

The guide is split into two parts:

- Part 1 contains specific information about Subject CP1
- Part 2 contains general information.

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 unique to this course.

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1.1 Subject CP1 – background and contents

History

The Core Practices subjects (Subjects CP1, CP2 and CP3) were introduced in the Institute and Faculty of Actuaries 2019 Curriculum.

Subject CP1 is *Actuarial Practice*.

Predecessors

The topics in the Core Practices subjects cover content previously in Subjects CA1, CA2 and CA3

- Subject CP1 replaces Subject CA1.
- Subject CP2 replaces Subject CA2.
- Subject CP3 replaces Subject CA3.

Exemptions

In order to be eligible for a pass in Subject CP1, you will need:

- to have passed or been granted an exemption from Subject CA1 during the transfer process
- to have met the profession's requirements based on the current curriculum.

See the profession's website for further details:

www.actuaries.org.uk/studying/exam-exemptions

Links to other subjects

- Subject CS1, CS2, CM1, CM2, CB1 and CB2 – These subjects provide principles and tools that are built upon in Subject CP1.
- Subjects SP1-9 and SA1-7 – The Specialist Principles and Specialist Advanced subjects use the concepts developed in this subject to solve more complex problems, to produce coherent advice, and to make recommendations in specific practice areas.
- It is also an essential introduction to Subject SP9, Enterprise Risk Management, and the Chartered Enterprise Risk Actuary qualification.

Contents

There are ten parts to the Subject CP1 course. The parts cover related topics and are broken down into chapters. At the end of every other 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 – 5 days
1	0	What is Subject CP1 all about?	29	X1	1
	1	Actuarial advice	33		
	2	External environment	29		
	3	Regulation	36		
	4	Introduction to financial products & customer needs	22		
2	5	Benefits overview & providers of benefits	29		
	6	Life insurance products	37		
	7	General insurance products	31		
3	8	Bond and money markets	29	X2	2
	9	Equity and property markets	28		
	10	Other investment classes	38		
	11	Behaviour of the markets	50		
	12	Valuation of investments	35		
4	13	Relationship between returns on asset classes	15		
	14	Choosing an appropriate investment strategy	32		
	15	Asset-liability management	35		
	16	Investment management	28		
5	17	Modelling	35		
	18	Data	42		
	19	Setting assumptions	31		
6	20	Mortality and morbidity	27	X3	3
	21	Expenses	22		
	22	Contract design	49		
	23	Pricing and financing	27		

Part	Chapter	Title	No of pages	X Assignment*	Tutorial – 5 days		
7	24	Risk governance	23	X4	4		
	25	Risk identification & classification	34				
	26	Financial product and benefit scheme risks	41				
	27	Accepting risk	21				
8	28	Risk measurement & reporting	35				
	29	Risk transfer	49				
	30	Other risk controls	44				
9	31	Provisions	28			X5	5
	32	Valuation of liabilities	35				
	33	Reporting results	24				
	34	Insolvency and closure	22				
10	35	Capital management	28				
	36	Capital requirements	24				
	37	Surplus & surplus management	44				
	38	Monitoring	34				
	39	Glossary	25				

* The X6 assignment consists of two case studies testing material across the whole course.

1.2 Subject CP1 – Syllabus and Core Reading

Syllabus

The Syllabus for Subject CP1 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 Actuarial Practice subject is to use the technical and business skills learnt in the Actuarial Statistics, Actuarial Modelling and Business subjects combining them with new material on how the skills are applied to solve real world problems.

The course provides the essential knowledge of risk management techniques and processes required by all actuaries and is an essential introduction to Enterprise Risk Management, Subject SP9 and the Chartered Enterprise Risk Actuary qualification.

The course also underpins the SP and SA subjects, covering essential background material that is common to a number of specialisms.

Competences

On successful completion of this subject, a student will be able to:

1. understand strategic concepts in the management of financial institutions and products
2. understand the risks faced both by individuals and groups who might effect financial products and also by the providers of such products
3. explain the principles and techniques used to manage these risks
4. understand the key techniques used by the providers of financial products to ensure that promised liabilities can be met
5. apply this knowledge, together with the skills learned from other subjects, to analyse the issues and formulate, justify, and present plausible solutions to business problems.

Syllabus topics

Note: In this syllabus the phrase ‘financial products’ is used to encompass all types of financial product, scheme, contract or other arrangements.

1.	Actuarial advice	(2.5%)
2.	Meeting the needs of stakeholders	(2.5%)
3.	The actuarial control cycle	(2.5%)
4.	Risk governance	(5%)
5.	Risk identification and classification	(5%)
6.	Risk measurement and monitoring	(5%)
7.	Responses to risk	(7.5%)
8.	Capital management and monitoring	(5%)
9.	The general business environment	(20%)
10.	Specifying the problem	(5%)
11.	Producing the solution	(30%)
12.	Living with the solution	(7.5%)
13.	Monitoring	(2.5%)
14.	Principal terms	(0%)

The weightings are indicative of the approximate balance of the assessment of this subject between the main syllabus topics, averaged over a number of examination sessions.

The weightings also correspond 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.

Detailed syllabus objectives

1. Actuarial advice (2.5%) (Chapter 1)
 - 1.1 Identify the clients that actuaries advise in both the public and private sectors and the stakeholders affected by that advice.
 - 1.2 Describe how stakeholders other than the client might be affected by any actuarial advice given.
 - 1.3 Describe the functions of the clients that actuaries advise and the types of advice that actuaries might give to their clients.
 - 1.4 Explain why and how certain factual information about the client should be sought in order to be able to give advice.
 - 1.5 Explain why subjective attitudes of clients and other stakeholders – especially towards risk – are relevant to giving advice.
 - 1.6 Distinguish between the responsibility for giving advice and the responsibility for taking decisions.
 - 1.7 Discuss the professional and technical standards that might apply to actuarial advice.
2. Meeting the needs of stakeholders (2.5%) (Chapters 4, 5, 6 and 7)
 - 2.1 Describe the main providers of benefits on contingent events.
 - 2.2 Describe the main types of social security benefits and financial products and explain how they can provide benefits on contingent events which meet the needs of clients and stakeholders.
 - 2.3 Explain the main principles of insurance and pensions that impact on these benefits and products.
 - 2.4 Describe the ways of analysing the needs of clients and stakeholders to determine the appropriate benefits on contingent events to be provided by financial products.
3. The actuarial control cycle (2.5%) (Chapter 0)
 - 3.1 Describe the actuarial control cycle and explain the purpose of each of its components.
 - 3.2 Demonstrate how the actuarial control cycle can be applied in a variety of practical commercial situations, including its use as a risk management control cycle.

4. Risk governance (5%) (Chapters 24 and 27)
- 4.1 Describe the risk management process for a business that can aid in the design of financial products to provide benefits on contingent events.
 - 4.2 Discuss the differences between risk and uncertainty and between systematic and diversifiable risk.
 - 4.3 Describe how enterprise risk management can add value to the management of a business.
 - 4.4 Discuss the roles and responsibilities of various stakeholders in the management of risk.
 - 4.5 Discuss risk appetite and the attainment of risk efficiency.
5. Risk identification and classification (5%) (Chapters 25, 26 and 27)
- 5.1 Describe the techniques that can be used to identify the risks associated with financial products or with the providers of benefits on contingent events.
 - 5.2 Discuss how the risks of a project are taken into account in project management.
 - 5.3 Describe the risks and uncertainties affecting:
 - the level and incidence of benefits payable on contingent events
 - the overall security of benefits payable on contingent events.
 - 5.4 Describe how risk classification can aid the design of financial products that provide benefits on contingent events.
 - 5.5 Show an awareness and understanding of the risk categories that apply to businesses in general, and particularly financial services businesses.
6. Risk measurement and monitoring (5%) (Chapter 28)
- 6.1 Describe the various methods used to quantify risk.
 - 6.2 Discuss the uses of scenario analysis, stress testing and stochastic modelling in the evaluation of risk.
 - 6.3 Describe different methods of risk aggregation and explain their relative advantages and disadvantages.
 - 6.4 Explain the importance of risk reporting to managers and other stakeholders.
 - 6.5 Discuss the methods of measuring and reporting risk that can be used by the main providers of benefits on contingent events.

7. Responses to risk (7.5%) (Chapter 27, 29 and 30)
 - 7.1 Describe attitudes to and methods of risk acceptance, rejection, transfer and management for stakeholders.
 - 7.2 Distinguish between the risks taken as an opportunity for profit and the risks to be mitigated.
 - 7.3 Describe the principle of pooling risks.
 - 7.4 Describe the methods of transferring risks.
 - 7.5 Analyse the risk management aspects of a particular business issue and recommend an appropriate risk management strategy.
 - 7.6 Describe the tools that can be used to aid the management and control of risk.
 - 7.7 Discuss the issues surrounding the management of risk for financial product providers.
 - 7.8 Describe how risks with low likelihood but high impact might be managed.
8. Capital management and monitoring (5%) (Chapters 35 and 36)
 - 8.1 Discuss the interrelationship between risk and capital management.
 - 8.2 Explain the implication of risk for capital requirement, including economic and regulatory capital requirements.
 - 8.3 Describe how the main providers of benefits on contingent events can meet, manage and match their capital requirements.
 - 8.4 Discuss the implications of the regulatory environment in which the business is written for provisioning and capital requirements.
 - 8.5 Discuss risk-based capital and compare with other measures of capital needs.
 - 8.6 Discuss the merits of looking at an economic balance sheet in order to determine the risk-based capital requirements of a provider of benefits on contingent events.
 - 8.7 Discuss the use of internal models for assessment of economic and regulatory capital requirements.

9 The general business environment (20%)

9.1 Regulatory environment (Chapter 3)

- 9.1.1 Describe the principles and aims of prudential and market conduct regulatory regimes.
- 9.1.2 Discuss the role that major financial institutions can play in supporting the regulatory and business environment.
- 9.1.3 Explain the concept of information asymmetry.
- 9.1.4 Explain how certain features of financial contracts might be identified as unfair.
- 9.1.5 Discuss the implications of a requirement to treat the customer fairly.

9.2 External environment (Chapter 2)

Describe the implications for the main providers of benefits on contingent events of:

- legislation — regulations
- State benefits
- tax
- accounting standards
- capital adequacy and solvency
- corporate governance
- risk management requirements
- competitive advantage
- commercial requirements
- changing cultural and social trends
- climate change
- demographic changes
- environmental issues
- lifestyle considerations
- international practice
- technological changes.

9.3 Investment environment (Chapters 8, 9,10, 11 and 15)

9.3.1 Discuss the cashflows of simple financial arrangements and the need to invest appropriately to provide for financial benefits on contingent events.

9.3.2 Demonstrate a knowledge and understanding of the characteristics of the principal investment assets and of the markets in such assets.

9.3.3 Describe how the risk profile of the principal investment assets affects the market in such assets.

9.3.4 Explain the principal economic influences on investment markets.

9.3.5 Describe other factors affecting supply and demand in investment markets.

10 Specifying the problem (5%)

10.1 Contract design (Chapter 22)

Discuss the factors to be considered in determining a suitable design for financial products that will provide benefits on contingent events in relation to:

- the characteristics of the parties involved
- the risk appetite or risk aversion of the parties involved
- the regulatory environment
- the market for the product
- competitive pressures
- the level and form of benefits to be provided
- any options or guarantees that may be included
- the benefits payable on discontinuance or transfer of rights
- the method of financing the benefits to be provided
- the choice of assets when benefits are funded
- administrative issues
- the charges that will be levied
- the capital requirements.

- 10.2 Data (Chapter 18)
- 10.2.1 Explain the ethical and regulatory issues involved in working with personal data and extremely large data sets.
 - 10.2.2 Explain the main issues to be addressed by a data governance policy and its importance for an organization.
 - 10.2.3 Explain the risks associated with use of data (including algorithmic decision making).
 - 10.2.4 Discuss the data requirements for determining values for assets, future benefits and future funding requirements.
 - 10.2.5 Describe the checks that can and should be made on data.
 - 10.2.6 Describe the circumstances under which the ideal data required might not be available and discuss ways in which this problem may be overcome.
 - 10.2.7 Describe how to determine the appropriate grouping of data to achieve the optimal level of homogeneity.
- 11 Producing the solution (30%)
- 11.1 Modelling (Chapter 17)
- 11.1.1 Describe the approaches available to produce the solution to an actuarial or financial problem.
 - 11.1.2 Describe the construction of actuarial models to produce solutions in terms of:
 - the objectives of the model
 - the operational issues that should be considered in designing and running models.
 - 11.1.3 Describe the use of models for:
 - pricing or setting future financing strategies
 - risk management: assessing the capital requirements and the return on capital or the funding levels required
 - assessing the provisions needed for existing commitments to provide benefits on contingent events
 - pricing and valuing options and guarantees.
 - 11.1.4 Describe how sensitivity analysis of the results of the models can be used to help decision making.

11.2 Assumption setting (Chapter 19)

Describe the principles behind the determination of assumptions as input to a model relevant to producing a specific solution having regard to:

- the types of information that may be available to help in determining the assumptions to be used
- the extent to which each type of information may be useful, and the other considerations that may be taken into account, in deciding the assumptions
- the level of prudence in the assumptions required to meet the objectives of the client.

11.3 Mortality and morbidity (Chapter 20)

11.3.1 Describe the principal forms of heterogeneity within a population, the ways in which selection can occur, and how the use of risk classification can address the consequences of selection.

11.3.2 Explain why it is necessary to have different mortality tables for different classes of lives.

11.3.3 State the principal factors which contribute to the variation in mortality and morbidity by region and according to the social and economic environment, specifically:

- occupation
- nutrition
- housing
- climate / geography
- education
- genetics.

11.3.4 Explain how various types of selection (*eg* temporary initial selection, class selection) can be expected to occur among individuals or groups effecting financial products.

11.3.5 Explain the concept of mortality convergence.

11.3.6 Describe how decrements can have a selective effect on the remaining business.

11.4 Expenses (Chapter 21)

11.4.1 Describe the types of expenses that the providers of benefits on contingent events must meet.

11.4.2 Describe how expenses might be allocated when pricing financial products.

- 11.5 Developing the cost and the price (Chapter 23)
- 11.5.1 Discuss how to determine the cost of providing benefits on contingent events.
 - 11.5.2 Discuss the factors to take into account when determining the appropriate level and incidence of contributions to provide benefits on contingent events.
 - 11.5.3 Discuss the factors to take into account when determining the price or the contributions to charge for benefits on contingent events.
 - 11.5.4 Discuss the influence of provisioning, or regulatory capital requirements on pricing or setting financing strategies.
- 11.6 Investment management (Chapters 12, 13, 14 and 16)
- 11.6.1 Discuss the principles and objectives of investment management and analyse the investment needs of an investor, taking into account liabilities, liquidity requirements and the risk appetite of the investor.
 - 11.6.2 Discuss the different methods for the valuation of individual investments and demonstrate an understanding of their appropriateness in different situations.
 - 11.6.3 Discuss the theoretical relationships between the total returns and the components of total returns, on equities, bonds and cash, and price and earnings inflation.
 - 11.6.4 Discuss the different methods for the valuation of portfolios of investments and demonstrate an understanding of their appropriateness in different situations.
 - 11.6.5 Discuss methods of quantifying the risk of investing in different classes and sub-classes of investment.
- 11.7 Provisioning (Chapters 31 and 32)
- 11.7.1 Discuss the different reasons for the valuation of the benefits from financial products and the impact on the choice of methodology and assumptions.

11.7.2 Discuss how to determine values for provisions in terms of:

- the need for placing values on provisions and the extent to which values should reflect risk management strategy
- the principles of 'fair valuation' of assets and liabilities and other 'market consistent' methods of valuing the liabilities
- the reasons why the assumptions used may differ in different circumstances
- the reasons why the assumptions and methods used to place a value on guarantees and options may differ from those used for calculating the accounting provisions needed
- how sensitivity analysis can be used to check the appropriateness of the values
- be able to perform calculations to demonstrate an understanding of the valuation methods.

11.7.3 Describe different methods of allowing for risk in cashflows.

11.7.4 Discuss different methods of allowing for uncertainty in present values of liabilities.

11.7.5 Discuss the purpose of and uses for equalisation reserves.

11.7.6 Describe the influence of comparisons with market values.

11.8 Relationship between assets and liabilities (Chapters 15 and 16)

11.8.1 Describe the principles of investment and the asset / liability matching requirements of the main providers of benefits on contingent events.

11.8.2 Show how actuarial techniques such as asset / liability modelling may be used to develop an appropriate investment strategy.

11.8.3 Describe the use of a risk budget for controlling risks in a portfolio.

11.8.4 Describe the techniques used to construct and monitor a specific asset portfolio.

11.8.5 Discuss the need to monitor investment performance and to review investment strategy.

- 12 Living with the solution (7.5%)
- 12.1 Maintaining profitability (Chapters 35, 36 and 37)
- 12.1.1 Describe how the main providers of benefits on contingent events can control and manage the cost of:
- payments arising on contingent events
 - expenses associated with the payment of benefits on contingent events.
- 12.1.2 Discuss how regulatory capital requirements impact on a provider's profitability.
- 12.1.3 Describe the tools available for capital management.
- 12.2 Determining the actual results (Chapters 16 and 37)
- 12.2.1 Describe how a provider can analyse actual performance against expected performance.
- 12.2.2 Describe how a provider can analyse performance of an investment portfolio against a benchmark.
- 12.2.3 Discuss the possible sources of surplus / profit and the management actions that can control the amount of surplus / profit.
- 12.2.4 Describe why a provider will carry out an analysis of the changes in its surplus / profit.
- 12.2.5 Describe how any surplus / profit arising may be distributed.
- 12.2.6 Discuss the issues surrounding the amount of surplus / profit that may be distributed at any time and the rationale for retention of surplus / profit.
- 12.3 Reporting actual results (Chapters 28 and 33)
- 12.3.1 Describe the reports and systems which may be set up to control the progress of the financial condition of the main providers of benefits on contingent events.
- 12.3.2 Describe the reports and systems which may be set up to monitor and manage risk at the enterprise level.
- 12.3.3 Discuss the issues facing the main providers of benefits on contingent events relating to reporting of risk.
- 12.4 Insolvency and closure (Chapter 34)
- Discuss the issues that need to be taken into account on the insolvency or closure of a provider of benefits on contingent events.

12.5 Options and guarantees (Chapters 22 and 30)

Discuss the issues surrounding the management of options and guarantees.

13 Monitoring (2.5%) (Chapters 21 and 38)

13.1 Describe how the actual experience can be monitored and assessed, in terms of:

- the reasons for monitoring experience
- the data required
- the process of analysis of the various factors affecting the experience
- the use of the results to revise models and assumptions.

13.2 Describe how the results of the monitoring process in the actuarial control cycle or the risk management control cycle are used to update the financial planning in a subsequent period.

14 Principal terms (0%) (Chapters 5, 6, 7, 29 and 39)

Have an understanding of the principal terms used in financial services, investments, asset management and risk management.

Core Reading

The Subject CP1 Course Notes include the Core Reading in full, integrated throughout the course.

Further reading

The exam will be based on the relevant Syllabus and Core Reading and the ActEd course material will be the main source of tuition for students.

1.3 Subject CP1 – summary of ActEd products

The following products are available for Subject CP1:

- Course Notes
- X Assignments – six assignments:
 - X1-X3: 80-mark tests containing a mix of short-answer and longer case-study questions from specific parts of the course (you are allowed 2¾ hours to complete these)
 - X4 and X5: 100-mark tests containing a mix of short-answer and longer case-study questions from specific parts of the course (you are allowed 3¾ hours to complete these)
 - X6: a 100-mark test containing two case studies testing material across the whole course (you are allowed 3¾ hours to complete this)
- Series X Marking
- Online Classroom – over 125 tutorial units
- Flashcards
- Revision Notes – ten A5 booklets
- ASET (2014-17 papers) – four years of exam papers, *ie* eight sittings, covering the period April 2014 to September 2017
- ASET (2019-20 papers) – two years of exam papers, *ie* four sittings, covering the period April 2019 to September 2020
- Mock Exam – two 100-mark tests (Paper 1 and Paper 2)
- Additional Mock Pack (AMP) – two additional 100-mark Paper 1 tests and two additional 100-mark Paper 2 tests
- Mock Exam Marking
- Marking Vouchers.

Products are generally available in both paper and eBook format. Visit www.ActEd.co.uk for full details about available eBooks, software requirements and restrictions.

The following tutorials are typically available for Subject CP1:

- Regular Tutorials (five days)
- Block Tutorials (five days).

Full details are set out in our *Tuition Bulletin*, which is available on our website at www.ActEd.co.uk.

1.4 Subject CP1 – skills and assessment

Exam skills

Exam question skill levels

In Subject CP1:

- Paper 1 will primarily test knowledge and application skills
- Paper 2 will primarily test the application and higher order skills.

The approximate split of assessment across the three skill types is:

Skill type	Paper 1	Paper 2	Overall
Knowledge	30%	10%	20%
Application	55%	45%	50%
Higher Order skills	15%	45%	30%

Assessment

Assessment consists of:

- Paper 1 – a 3¼-hour examination consisting of short questions (ranging from around 5 to 15 marks)
- Paper 2 – a 3¼-hour examination consisting of one or two case studies. Students will have 45 minutes planning time, during which they will be able to make notes and plan their responses. The remaining 2½ hours is writing time. Background detail will be provided for each case study and students will be required to provide written answers to various questions on each scenario.

These two examinations must be sat (and passed) together.

Each paper will be marked out of 100 and the scores for the two papers will be aggregated. There will be no requirement to pass or to reach a minimum standard on either paper on a stand-alone basis.

In the examination, questions may be set on any area of work in which actuaries participate, including wider fields such as banking, environmental issues, management of natural resources, and other topics. Questions will not require technical knowledge of the subject context beyond the material covered in this and the Actuarial Statistics (CS subjects), Actuarial Mathematics (CM subjects) and Business subjects (CB subjects), but a general understanding of the business, commercial, social and natural environment will be assumed.

1.5 Subject CP1 – questions, queries and feedback

Q: *What knowledge of earlier subjects should I have?*

A: The Course Notes are written on the assumption that students have studied the Core Principles subjects (the CS, CM and CB subjects) or the equivalent CT subjects. However, the key areas that are needed (*eg* a knowledge and understanding of the principal characteristics of the main asset classes and of the key macroeconomic variables and their inter-relationships) are revisited at the relevant points in this course.

Exam questions will not require technical knowledge of the subject context beyond the material covered in this and the Actuarial Statistics (CS subjects), Actuarial Mathematics (CM subjects) and Business (CB subjects), but a general understanding of the business, commercial, social and natural environment will be assumed.

Further details can be found in Sections 1.1 and 1.4.

Q: *How long is the exam?*

A: Details of the exams are given in Section 1.4.

Q: *Are both the papers sat on the same day?*

A: No. The papers will be sat on different days.

Q: *Are the two papers designated as testing different things?*

A: No, there's no distinction in what they can test. Both papers can test any aspect of the Subject CP1 course.

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:

www.ActEd.co.uk/paper_corrections.html

to see if the correction has already been dealt with. Otherwise please send details via email to **CP1@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 **CP1@bpp.com**.

If you have any comments or concerns about the Syllabus or Core Reading, these can be passed on to the profession 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**.

2.1 Before you start

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*
- an 'authorised' **scientific calculator** – you will find the list of permitted calculators on the profession's website. Please check the list carefully, since it is reviewed each year.

These are both available from the Institute and Faculty of Actuaries' eShop. Please visit www.actuaries.org.uk.

2.2 Core study material

This section explains the role of the Syllabus, Core Reading and supplementary ActEd text. It also gives guidance on how to use these materials most effectively in order to pass the exam.

Some of the information below is also contained in the introduction to the Core Reading produced by the Institute and Faculty of Actuaries.

Syllabus

The Syllabus for Subject CP1 has been produced by the Institute and Faculty of Actuaries. The relevant individual syllabus objectives are included at the start of each course chapter and a complete copy of the Syllabus is included in Section 1.2 of this Study Guide. We recommend that you use the Syllabus as an important part of your study.

Core Reading

The Core Reading has been produced by the Institute and Faculty of Actuaries. The purpose of the Core Reading is to ensure that tutors, students and examiners understand the requirements of the Syllabus for the qualification examinations for Fellowship of the Institute and Faculty of Actuaries.

The Core Reading supports coverage of the Syllabus in helping to ensure that both depth and breadth are re-enforced. It is therefore important that students have a good understanding of the concepts covered by the Core Reading.

The examinations require students to demonstrate their understanding of the concepts given in the Syllabus and described in the Core Reading; this will be based on the legislation, professional guidance *etc* that are in force when the Core Reading is published, *ie* on 31 May in the year preceding the examinations.

Therefore the exams in April and September 2021 will be based on the Syllabus and Core Reading as at 31 May 2020. We recommend that you always use the up-to-date Core Reading to prepare for the exams.

Examiners will have this Core Reading when setting the papers. In preparing for examinations, students are advised to work through past examination questions and may find additional tuition helpful. The Core Reading will be updated each year to reflect changes in the Syllabus and current practice, and in the interest of clarity.

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 this Core Reading.

ActEd text

Core Reading deals with each syllabus objective and covers what is needed to pass the exam. 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*.

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text

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Reading

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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 without notes.

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 Additional Mock Pack (AMP) Mock 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 written assessments that cover the material in each part of the course in turn. They can be used to develop and test your understanding of the material. The last assignment provides extra practice on case studies and tests topics across the course.

Combined Materials Pack (CMP)

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

CMP Upgrade

The purpose of the CMP Upgrade is to enable you to amend last year’s study material to make it suitable for study for this year.

Wherever possible, it lists the changes to the syllabus objectives, Core Reading and the ActEd material since last year that might realistically affect your chance of success in the exam. It is produced so that you can manually amend your notes. The upgrade includes replacement pages and additional pages where appropriate.

However, if a large number of changes have been made to the Course Notes and X Assignments, it is not practical to produce a full upgrade, and the upgrade will only *outline* the most significant changes. In this case, we recommend that you purchase a replacement CMP (printed copy or eBook) or Course Notes at a significantly reduced price.

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

A separate upgrade for eBooks is not produced but a significant discount is available for retakers wishing to re-purchase the latest eBook.

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. You should submit your script as an attachment to an email, in the format detailed in your assignment instructions. You will be able to download your marker's feedback via a secure link.

Don't underestimate the benefits of doing and submitting assignments:

- 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 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 provide 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 via a secure link 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 **www.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 person.

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 www.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 www.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 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.

Online Classroom

The Online Classroom acts as either a valuable add-on or a great alternative to a face-to-face or Live Online tutorial.

At the heart of the Online Classroom in each subject is a comprehensive, easily-searched collection of tutorial units. These are a mix of:

- teaching units, helping you to really get to grips with the course material, and
- guided questions, enabling you to learn the most efficient ways to answer questions and avoid common exam pitfalls.

The best way to discover the Online Classroom is to see it in action. You can watch a sample of the Online Classroom tutorial units on our website at www.ActEd.co.uk.

'Revision' products

Flashcards

For most subjects, there is **a lot of material** to revise. Finding a way to fit revision into your routine as painlessly as possible has got to be a good strategy. Flashcards are an inexpensive option that can provide a massive boost. They can also provide a variation in activities during a study day, and so help you to maintain concentration and effectiveness.

Flashcards are a set of A6-sized cards that cover the key points of the subject that most students want to commit to memory. Each flashcard has questions on one side and the answers on the reverse. We recommend that you use the cards actively and test yourself as you go.

The following questions and comments might help you to decide if flashcards are suitable for you:

- Do you have a regular train or bus journey?
Flashcards are ideal for regular bursts of revision on the move.
- Do you want to fit more study into your routine?
Flashcards are a good option for 'dead time', eg using flashcards on your phone or sticking them on the wall in your study.
- Do you find yourself cramming for exams (even if that's not your original plan)?
Flashcards are an extremely efficient way to do your pre-exam memorising.

If you are retaking a subject, then you might consider using flashcards if you didn't use them on a previous attempt.

'Revision & rehearsal' products

Revision Notes

Our Revision Notes have been designed with input from students to help you revise efficiently. They are suitable for first-time sitters who have worked through the ActEd Course Notes or for retakers (who should find them much more useful and challenging than simply reading through the course again).

The Revision Notes are a set of A5 booklets – perfect for revising on the train or tube to work. Each booklet covers one main theme or a set of related topics from the course and includes:

- Core Reading with a set of integrated short questions to develop your bookwork knowledge
- relevant past exam questions with concise solutions from the last ten years
- other useful revision aids.

ActEd Solutions with Exam Technique (ASET)

The ActEd Solutions with Exam Technique (ASET) contains our solutions to a number of 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 consists of two 100-mark mock exam papers 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 and Core Reading.

Additional Mock Pack (AMP)

The Additional Mock Pack (AMP) consists of four further 100-mark mock exam papers – Mock Exam 2 (Papers 1 and 2) and Mock Exam 3 (Papers 1 and 2). This is ideal if you are retaking and have already sat the Mock Exam, or if you just want some extra question practice.

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. In this subject it covers the marking of both Paper 1 and Paper 2.
- Marking Vouchers can be used for each mock exam paper. You will need two marking vouchers in order to have both Paper 1 and Paper 2 marked. Marking vouchers have to be used for marking the AMP mocks 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 email in the format detailed in the mock exam instructions
- you will be able to download the feedback on your marked script via a secure link.

2.4 Study skills and assessment

The Subject CP1 exams

It is important to recognise that the Subject CP1 exam is 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 do calculations. Numerical questions are possible in Subject CP1, but were rare in its predecessor (Subject CA1). 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 Subject CP1 exam questions. As ever, practice is the key to success.

The aim of the two Subject CP1 exam papers 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 a good knowledge of the Core Reading to score well and quickly on any bookwork questions.

Both exam papers will cover material from throughout the entire Subject CP1 course.

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 www.ActEd.co.uk/forums (or use the link from our home page at 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) or the SP subjects). Try to cover these chapters quickly to give yourself more time on the material with which you are less comfortable. Also, some 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 3.4, 3.7 and 3.12'*, 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* a library or a desk 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 and Core Reading example 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.

It's a fact that people are more likely to remember 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 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.

As ActEd tutors, it is very illuminating to see/hear how different students study for the exams. We hear quite a few students make comments such as:

- Assignment questions are not relevant to the exam.
- It's quicker just to read through the assignment questions and solutions.
- There isn't enough time to get the assignments done.

Sound familiar?

It may be worth thinking again for Subject CP1 as, when we look at the pass lists, we are finding that there is a correlation between students who are making the effort to do assignment, mock exam and past exam questions, and those who are happy on exam results day.

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 room. 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. 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 help remember the material when you come back to it later.
6. Attempt the questions in the notes as you work through the course. Write down your answer before you refer to the solution.
7. Attempt other questions and assignments on a similar basis, *ie* write down your answer before looking at the solution provided. Attempting the assignments under exam 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 exam conditions than your performance when you have access to the notes and are under no time pressure.
 - The knowledge that you are going to do an assignment under exam 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 write 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.

You can find further information on how to study in the profession's Student Handbook, which you can download from their website at:

www.actuaries.org.uk/studying

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 CP1, 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.

We recommend that you prepare for the exam by practising a large number of exam-style questions under exam conditions. This will:

- help you to develop the necessary knowledge and understanding of the key principles described in the Core Reading
- highlight exactly which are the key principles that crop up time and time again in many different contexts and questions
- help you to practise the specific skills that you will need to pass the exam.

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 profession has produced a document, 'Command verbs used in the Associate and Fellowship examinations', to help students to understand what each command verb is asking them to do.

It also gives the following advice:

- The use of a specific command verb within a syllabus objective does not indicate that this is the only form of question which can be asked on the topic covered by that objective.
- The examiners may ask a question on any syllabus topic using any of the agreed command verbs, as are defined in the document.

You can find the relevant document on the profession's website at:

www.actuaries.org.uk/studying/prepare-your-exams

Past exam papers

You can download some past exam papers and Examiners' Reports from the profession's website at www.actuaries.org.uk. However, please be aware that the majority of these exam papers are for the pre-2019 syllabus and so not all questions will be relevant.

The examination

IMPORTANT NOTE: The following information was correct at the time of printing, however it is important to keep up-to-date with any changes. See the profession's website for the latest guidance.

For the written exam, the examination room will be equipped with:

- the question paper
- an answer booklet
- rough paper
- a copy of the *Tables*.

Remember to take with you:

- black pens
- an authorised scientific calculator – please refer to www.actuaries.org.uk for the latest advice.

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 www.ActEd.co.uk/forums (or use the link from our home page at www.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 from time to time 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 (www.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 profession 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 education.services@actuaries.org.uk.