



Institute
and Faculty
of Actuaries

Associateship Qualification

Actuarial Practice (CP1)

Core Principles

Syllabus for the 2024 Examinations

April 2023

Actuarial Practice (CP1)

Syllabus for the 2024 Examinations

This syllabus includes information to support the study of this subject. It will guide you through what you need to learn, application of learning as well as the skills that you need to develop. Information regarding the assessment of this subject is also included.

This syllabus includes:

- Aim of the subject
- How this subject links across the Qualifications
- Subject topics and topic weightings
- Subject objectives
- Assessment information

Aim

Understand how to apply the underlying actuarial principles, mathematical and statistical techniques as well as a business finance and economics concepts to a range of problems and issues in commercial and business environments, focussing on problems and issues in financial services, with application to wider domains and industries.

Links across the Qualification

Associateship Qualification

Actuarial Practice (CP1) builds upon principles and techniques from:

- Business Finance (CB1) and Business Economics (CB2)
- Actuarial Statistics (CS1) and Risk Modelling & Survival Analysis (CS2)
- Actuarial Mathematics for Modelling (CM1) and Economic Modelling (CM2)

Fellowship Qualification

Actuarial Practice underpins the Specialist Principles Subjects SP1–SP9 and the Specialist Advanced Subjects SA1–SA7, where the concepts developed in this subject are used to solve more complex problems, produce coherent advice and make recommendations in specific practice areas.

Actuarial Practice also provides an essential introduction to SP9 (Enterprise Risk Management) and the Chartered Enterprise Risk Actuary credential.

Topics and Topic Weightings

1. Actuarial advice and meeting the needs of stakeholders [5%]
2. General business environment [20%]
3. Specifying the problem [15%]
4. Developing the solution [45%]
5. Living with the solution [15%]

Objectives

Note: As part of your study, you should develop an understanding of the principal terms used in financial services, investments, asset management and risk management.

1 Actuarial advice and meeting the needs of stakeholders [5%]

Recognise the considerations in providing actuarial advice and meeting the needs of stakeholders and the main benefits and financial products that actuaries advise on.

- 1.1 Understand the clients that actuaries advise and the considerations to ensure that this advice meets the needs of stakeholders
 - 1.1.1 How stakeholders other than the client may be affected by any actuarial advice given
 - 1.1.2 The business roles that actuaries advise and the types of advice that actuaries may give to their clients
 - 1.1.3 Why and how certain factual information about the client should be sought in order to be able to give advice
 - 1.1.4 Why subjective attitudes of clients and other stakeholders – especially towards risk are relevant to giving advice
 - 1.1.5 The professional and technical standards that may apply to actuarial advice
- 1.2 Understand the main benefits and financial products that actuaries advise on
 - 1.2.1 Main providers of benefits on contingent events
 - 1.2.2 Main types of social security benefits and financial products and how they can provide benefits on contingent events that meet the needs of clients and stakeholders
 - 1.2.3 Main principles of insurance and pensions that impact on these benefits and products
 - 1.2.4 Ways of analysing the needs of clients and stakeholders to determine appropriate financial products

2 General business environment [20%]

Understand how the external business environment can impact an organisation's commercial decisions.

- 2.1 Understand the regulatory environment for an organisation
 - 2.1.1 Principles and aims of prudential and market conduct regulatory regimes
 - 2.1.2 The role that major financial institutions can play in supporting the regulatory and business environment
 - 2.1.3 The concept of information asymmetry
 - 2.1.4 How certain features of financial contracts may be identified as unfair, and the impact of the requirement to treat a customer fairly
- 2.2. Understand the various external forces on an organisation and their impact
 - 2.2.1 The implications of external forces on financial products for the main providers of financial products:
 - legislation, regulations, tax and accounting standards
 - state benefits
 - capital adequacy and solvency
 - corporate governance and risk management requirements
 - competitive advantage and commercial requirements
 - changing cultural and social trends, demographic changes and lifestyle considerations

- climate change and other environmental issues
- international practice
- technological changes

2.3 Understand the impact of the investment environment

- 2.3.1 The characteristics of the principal investment assets and of the markets in such assets
- 2.3.2 How the risk profile of the principal investment assets affects the market in such assets
- 2.3.3 Principal economic influences on investment markets
- 2.3.4 Other factors affecting supply and demand in investment markets

3 Specifying the problem [15%]

Understand how to identify, classify, measure and manage risks in a range of commercial situations including use of the actuarial control cycle for risk management.

3.1 Apply the Actuarial Control Cycle for an organisation

- 3.1.1 The Actuarial Control Cycle and the purpose of each of its components
- 3.1.2 How the Actuarial Control Cycle can be applied in a variety of practical commercial situations, including its use as a risk management control cycle

3.2 Understand the principles of organisational risk governance

- 3.2.1 The risk management process for a business that can aid in the design of financial products
- 3.2.2 The differences between systematic and diversifiable risk
- 3.2.3 How enterprise risk management can add value to the management of a business
- 3.2.4 The roles and responsibilities of various stakeholders in the management of risk
- 3.2.5 Risk appetite and the attainment of risk efficiency

3.3 Identify risks and understand how risk classification can be used in the design of financial products or for actuarial problem solving

- 3.3.1 Techniques used to identify the risks associated with financial products for their purchasers and providers
- 3.3.2 The risks and uncertainties affecting:
 - the level and incidence of benefits payable on contingent events
 - the overall security of benefits payable on contingent events
- 3.3.3 How risk classification can aid the design of financial products
- 3.3.4 The possible risk categories that apply to businesses in general, and particularly financial services businesses

3.4 Understand and apply the main methods of measuring and monitoring risk that can be used

- 3.4.1 The methods used to quantify risk
- 3.4.2 Uses of scenario analysis, stress-testing and stochastic modelling in the evaluation of risk
- 3.4.3 Methods of risk aggregation and their relative advantages and disadvantages
- 3.4.4 The methods of measuring and reporting risk that can be used by the main providers of financial products

3.5 Understand the main factors to be considered in deciding on the contract design of financial products

- 3.5.1 The factors to be considered in determining a suitable design for financial products 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

3.5.2 The issues surrounding the management of options and guarantees

3.6 Recognise the potential risks and issues in working with data and understand how to manage those issues and risks

3.6.1 Ethical and regulatory issues associated with the use of data, and data governance

3.6.2 Data requirements for determining values for assets, future benefits and future funding requirements

3.6.3 Checks on data

3.6.4 Circumstances under which the ideal data may not be available and ways in which this can be addressed

4 Developing the solution [45%]

Understand how models are used to solve actuarial or financial problems including the considerations in setting the assumptions to be used for modelling and apply relevant approaches and techniques to the valuation of liabilities.

4.1 Understand how models are used to solve actuarial or financial problems

4.1.1 The approaches available to produce the solution to an actuarial or financial problem

4.1.2 The construction of actuarial models in terms of:

- the objectives of the model
- the operational issues that should be considered in designing and running models

4.1.3 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

4.1.4 How sensitivity analysis of the results of the models can be used to help decision making

4.2 Understand the considerations in setting the assumptions to be used for modelling an actuarial or financial problem

4.2.1 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.

4.2.2 Allowance for mortality and morbidity

- 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
- Why it is necessary to have different mortality tables for different classes of lives
- How to determine the appropriate grouping of data to achieve the optimal level of homogeneity
- Principal factors that contribute to the variation in mortality and morbidity by region and according to the social and economic environment
- How various types of selection (e.g. temporary initial selection, class selection) can be expected to occur among individuals or groups
- The concept of mortality convergence
- How decrements can have a selective effect on the remaining business

4.2.3 Allowance for expenses

- The types of expenses that the providers of financial products must meet
- How expenses may be allocated when pricing financial products

4.3 Understand the considerations for determining the cost of a financial product or benefit and the price charged to the consumer

4.3.1 How to determine the cost of providing benefits on contingent events

4.3.2 The factors to take into account when determining the appropriate level and incidence of contributions to provide benefits on contingent events

4.3.3 The influence of provisioning and regulatory capital requirements on pricing and setting financing strategies

4.4 Understand relevant investment management principles

4.4.1 The principles and objectives of investment management and the needs of an investor, taking into account liabilities, liquidity requirements and risk appetite

4.4.2 Methods for the valuation of individual investments and their appropriateness in different situations

4.4.3 The theoretical relationships between the total returns and the components of total returns, on equities, bonds and cash, and price and earnings inflation

4.4.4 Methods for the valuation of portfolios of investments and their appropriateness in different situations

4.4.5 Methods for quantifying the risk of investing in different classes and sub-classes of investment

4.5 Apply relevant approaches and techniques to the valuation of liabilities

4.5.1 Reasons for the valuation of the benefits from financial products and the impact on the choice of methodology and assumptions

4.5.2 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 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

4.5.3 Methods of allowing for risk in cash-flows

4.5.4 Methods of allowing for uncertainty in present values of liabilities

4.5.5 The influence of comparisons with market values

4.6 Understand the relationship between assets and liabilities

4.6.1 The principles of investment and the asset/liability matching requirements of the main providers of financial products

4.6.2 How actuarial techniques such as asset/liability modelling may be used to develop an appropriate investment strategy

4.6.3 The use of a risk budget for controlling risks in a portfolio

4.6.4 The techniques used to construct and monitor a specific asset portfolio

4.6.5 The need to monitor investment performance and to review investment strategy

4.7 Understand stakeholder responses to risk and how they can be managed

4.7.1 Methods of risk acceptance, rejection, transfer and control for stakeholders

4.7.2 Difference between the risks taken as an opportunity for profit and the risks to be mitigated

4.7.3 Principle of pooling risks

4.7.4 Risk management aspects of a particular business issue and development of an appropriate risk management strategy

4.7.5 Tools for the management and control of risk

4.7.6 Management of risks with low likelihood but high impact

4.8 Recognise the importance of capital for an organisation

4.8.1 Interrelationship between risk and capital management

4.8.2 Implication of risk for capital requirement, including economic and regulatory capital requirements

4.8.3 How the main providers of benefits on contingent events can meet, manage and match their capital requirements

4.8.4 Implications of the regulatory environment in which the business is written for provisioning and capital requirements

4.8.5 Risk-based capital and other measures of capital needs

4.8.6 Merits of an economic balance sheet to determine risk-based capital requirements

4.8.7 Use of internal models for assessment of economic and regulatory capital requirements

5 Living with the solution [15%]

Monitoring, reporting and responding to experience.

5.1 Apply appropriate techniques to manage and maintain an organisations profitability

5.1.1 How the main providers of financial products can control and manage the cost of:

- payments arising on contingent events
- expenses associated with the payment of benefits

5.1.2 How regulatory capital requirements impact on a provider's profitability

- 5.1.3 The tools available for capital management
- 5.2 Analyse and understand performance and the considerations for an organisation to distribute surplus
 - 5.2.1 How a provider can analyse actual performance against expected performance
 - 5.2.2 How a provider can analyse performance of an investment portfolio against a benchmark
 - 5.2.3 Sources of surplus/profit and the management actions that can control the amount of surplus/profit
 - 5.2.4 Why a provider will carry out an analysis of the changes in its surplus/profit
 - 5.2.5 How any surplus/profit arising may be distributed
 - 5.2.6 Considerations in determining the amount of surplus/profit that may be distributed at any time and the rationale for retention of surplus/profit
- 5.3 Understand how an organisation can monitor its experience and manage risk
 - 5.3.1 Reports and systems that may be set up to control the progress of the financial condition of the main providers of financial products
 - 5.3.2 Reports and systems that may be set up to monitor and manage risk at the enterprise level
 - 5.3.3 Issues facing the main providers of financial products relating to reporting of risk
 - 5.3.4 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
 - 5.3.5 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

Assessment

This subject will be assessed via two timed and online written examination papers.

- CP1 Paper 1, 3 hours and 20 minutes (including reading time)

CP1 paper 1 consists of a number of questions of varying marks where the candidate will need to construct and type answers in Word.

- CP1 Paper 2, 3 hours and 20 minutes (including reading time)

CP1 Paper 2 will usually include scenarios and ask the candidate to answer questions relevant to each scenario and will include a number of questions of varying marks. The candidate will need to construct and type answers in Word.

In order to pass this subject, you must sit both CP1 paper 1 and CP1 paper 2 within the same sitting, and achieve a combined mark of a pass.

Topic weighting

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.

Candidates for assessment should ensure that they are well prepared across the entire syllabus. The examination can be composed of questions drawing from any part of the syllabus within any examination sitting and using any command verb. This includes knowledge, techniques, principles, theories, and concepts as specified. Candidates should not rely on past papers alone and should ensure they have covered the entire

syllabus as part of their learning and development of this subject. A list of command verbs used in the examinations is included on the IFoA website.

In each examination, candidates 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 your understanding of that knowledge as well as through questions that ask you to apply relevant knowledge to scenarios.
- Application will be demonstrated through answering questions which assess that you can 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 that you can use relevant knowledge, concepts and skills to solve problems, draw appropriate conclusions, and make meaningful and appropriate comments on those conclusions.

As a guide, in the examination of this subject, you can expect that in:

- Paper 1 will primarily test Knowledge and Application skills. The approximate split of assessment for paper 1 across the three skill types is 30% Knowledge, 55% Application and 15% Higher Order skills.
- Paper 2 will primarily test the Application and Higher Order skills. The approximate split of assessment for paper 2 across the three skill types is 10% Knowledge, 45% Application and 45% Higher Order skills.

Qualifications Handbook, Examinations Handbook and Assessment Regulations

Please ensure you read and have understood the Examinations Handbook and Assessment Regulations ahead of your exam as well as the Qualifications Handbook. These are all available on the IFoA website.

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