



Institute  
and Faculty  
of Actuaries

# Fellowship Qualification

## Life Insurance (SP2) Specialist Advanced

Syllabus for the 2024 Examinations

April 2023

# Life Insurance (SP2)

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

### Links across the qualifications

#### Associateship qualification

##### CP1 – Actuarial Practice

Understanding the nature of risks and how to manage these risks is vital for life insurance. CP1 provides a fundamental background to different types of risk from an actuarial perspective and how these risks can be managed.

#### Fellowship qualification

There are two subjects covering life insurance, Life Insurance Specialist Principles (SP2) and Life Insurance Specialist Advanced (SA2). Each subject develops a specific set of skills and knowledge needed by actuaries working in, or who wish to work in life insurance.

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

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

### Topics and Topic Weightings

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

## Objectives

Note: The life insurance products covered exclude those covered by the Health and Care Principles subject.

### 1 Life insurance products and general business environment [15%]

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

#### 1.1 Describe the main types of life insurance products

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

1.1.2 Life insurance product bases:

- Conventional without profits
- With-profits
- Unit-linked
- Index-linked

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

1.2 Understand the link between main types of life insurance products and the needs of the consumers, key risks for the insured and the purpose and key risks for the insurer

1.3 Identify the impact of the general business environment on the management of a life insurance business

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

### 2 Product design and specific features [25%]

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

2.1 Demonstrate an understanding of and apply actuarial principles to the design of life insurance products

2.1.1 Factors to consider when determining a suitable design, in terms of premiums, benefits and charges, for a life insurance product

2.1.2 Determine a suitable design for a product in a given situation

2.1.3 Relative merits of different product designs

## 2.2 Demonstrate an understanding of with-profits business management

2.2.1 Methods of distributing profits to with-profits policyholders

2.2.2 Main uses of asset shares and how they may be built up using a recursive formula

## 2.3 Apply the principles of unit pricing for internal unit-linked funds

## 2.4 Determine discontinuance and alteration terms for without-profits contracts

2.4.1 Principles of setting discontinuance and alteration terms

2.4.2 Different methods of determination of discontinuance and alteration terms

2.4.3 Extent to which these methods meet the principles in 2.4.1

2.4.4 Surrender values and alteration terms for conventional without-profits contracts using reserves or by equating policy values

**3 Risks and risk management [30%]**

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

## 3.1 Assess how the following can be a source of risk to a life insurance company:

- Policy and other data
- Mortality rates
- Investment performance
- Expenses, including the effect of inflation
- Persistency
- Mix of new business
- Volume of new business
- Guarantees and options
- Competition
- Actions of the board of directors
- Actions of distributors
- Failure of appropriate management systems and controls
- Counterparties
- Legal, regulatory and tax developments
- Fraud
- Aggregation and concentration of risk.

## 3.2 Demonstrate an understanding of reinsurance as a risk management technique

3.2.1 Purposes of reinsurance

3.2.2 Different types and structures of reinsurance

3.2.3 Factors that should be considered before taking out reinsurance

## 3.3 Demonstrate an understanding of underwriting as a risk management technique

3.3.1 Purposes of underwriting

3.3.2 Different approaches by which underwriting is applied

3.3.3 Factors that should be considered when determining the level of underwriting to use

### 3.4 Demonstrate an understanding of asset-liability matching as a risk management technique

#### 3.4.1 Principles of investment for a life insurance company

#### 3.4.2 Categorise life insurance liabilities into different types for asset-liability matching purposes

#### 3.4.3 Asset-liability matching strategy for different types of liability

### 3.5 Propose further ways of managing the risks in 3.1, including:

- policy data checks
- choice of with-profits bonus method
- capital management
- expense control
- policy retention activity
- management of new business mix and volumes
- management of options
- systematic risk assessment and management strategies

## 4 Models and valuation [15%]

Have an understanding of how life insurance companies use models within their business.

### 4.1 Describe the main features of a life insurance model

#### 4.1.1 Objectives and basic features of a life insurance model

#### 4.1.2 Stochastic and deterministic approaches

#### 4.1.3 Use of sensitivity analysis

### 4.2 Demonstrate an understanding of the different uses of actuarial models for decision making purposes in life insurance

- pricing products
- developing investment strategy
- projecting solvency
- calculating embedded value

### 4.3 Demonstrate an understanding of the methods used for determining the cost of options and guarantees

#### 4.3.1 Use of stochastic simulation and the use of option prices to determine the cost of an investment guarantee

#### 4.3.2 Assessment of the cost of simple mortality options

### 4.4 Determine supervisory reserves and solvency capital requirements for a life insurance company

#### 4.4.1 How supervisory reserves and solvency capital requirements may be determined, including:

- market consistent valuation
- non-unit reserves
- Value at Risk (VaR) capital assessment

#### 4.4.2 Interplay between the strength of the supervisory reserves and the level of solvency capital required

#### 4.4.3 Passive and active valuation approaches, including the valuation of assets

## 5 Monitoring experience and setting assumptions [15%]

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

5.1 Apply the principles of setting assumptions for life insurance business

5.1.1 For pricing life insurance contracts, including profit requirements

5.1.2 For determining liabilities

5.1.3 Why the assumptions used for supervisory reserves may be different from those used in pricing

5.1.4 Principles of setting assumptions for determining embedded value

5.2 Demonstrate the relevance of experience monitoring to a life insurance company

5.2.1 Why it is important for a life insurance company to monitor its experience

5.2.2 How to monitor actual mortality, persistency, expense and investment experience of a life insurance company, including the data required

5.3 Demonstrate the relevance of analysis of surplus or profit

5.3.1 How to undertake an analysis of surplus and an analysis of embedded value profit

5.3.2 Use the results of the analyses

### Assessment

The assessment of this subject will consist of one examination.

Candidates can expect to answer a number of questions of varying marks, using Microsoft Word to construct and type their answers. The duration of this examination is three hours and twenty minutes and is timed and online. This time includes reading time.

Candidates 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:

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

### 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 and have an understanding of the principal terms used in life insurance. 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 approximately 25% of the total number of marks for this examination be allocated to the demonstration of knowledge, 50% to application and 25% to higher order.

#### 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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