Actuaries Institute.

Fellowship Program

Life Insurance and Retirement Valuation

Subject Syllabus 2026

1. Overview and aim

This subject aims to provide students with an understanding of how actuarial judgment is required when considering the purpose of a valuation. Implications of different methods, models, and assumptions are discussed through the consideration of liability valuations (life insurance and retirement), risk-based capital requirements, and appraisal values.

2. Student outcomes

After successfully completing this subject, students will be able to:

- assess cash flows arising from savings and risk products from the viewpoint of product providers;
- plan and produce appropriate methods, models, and parameters to value uncertain future cash flows;
- apply their valuation knowledge to produce and/or evaluate policy liabilities, benefit liabilities, emerging profit, capital adequacy margins, the economic value of a life insurer, and the net position (surplus/deficit) of a retirement fund; and
- set out a process to analyse changes in profit, surplus, or embedded value.

3. Prerequisites

While there are no formal prerequisites for this subject, students will be assumed to have studied (but not necessarily passed) all Foundation subjects and all Associate subjects.

4. Assessment skill level

This subject's assessment will test the following skill levels in the proportions shown in the brackets:

- Simple Application (25%): demonstration of detailed knowledge and understanding of the topic;
- Application (50%): demonstration of an ability to apply the principles underlying the topic within a given context; and
- Higher-Order (25%): demonstration of the ability to perform deeper analysis and assessment of situations, including forming judgments, taking into account different points of view, comparing and contrasting situations, suggesting possible solutions and actions, and making recommendations.

5. Assessment method

The subject is assessed via a three-hour (plus 15-minute reading time) open-book examination, worth 80% of the mark, and an assignment worth 20% of the mark.

6. Learning objectives

The following is a list of the learning objectives for this subject. A mapping to the relevant subject chapter is indicated in brackets after each learning objective.

1. Explain the overarching framework for valuing uncertain future cash flows (C2)

1.1. Describe the actuarial approach to valuing cash flows

1.2. Outline the probabilistic nature of actuarial models

1.3. Explain, in general, actuarial models, their inputs and outputs, and how they are affected by professionalism and the external environment

1.4. Describe the qualitative aspects of providing actuarial advice

2. Analyse the cash flows arising under savings and protection products from the viewpoint of the life insurer and retirement fund (C3)

2.1. Determine the types and characteristics of cash flows that arise for each product type

2.2. Explain the key features of the main product types offered by life insurers and retirement funds

2.3. Discuss how investment risks may be shared

2.4. Explain how mortality and morbidity affect cash flows

3. Evaluate the characteristics of policy and benefit liabilities (C4)

3.1. Explain the characteristics of the different types of life company or retirement fund liabilities

3.2. Describe reasons for valuing policy and benefit liabilities

3.3. Discuss how the reasons for valuing liabilities might impact the approach used

3.4. Describe key stakeholders and their interests in valuation results

4. Prepare a valuation of life insurance and retirement fund liabilities (C5)

4.1. Evaluate a valuation method, model, and actuarial basis for major insurance product lines and retirement products (C5)

4.2. Assess the principles guiding the selection of valuation approaches

4.3. Analyse various valuation methodologies, including cash-flow projection versus formula, prospective versus retrospective, net premium versus gross premium, and stochastic versus deterministic

4.4. Distinguish between different valuation methodologies and consider the circumstances where each might be applied

4.5. Apply methodologies for calculating claims reserves for IBNR, RBNA and CICP/DLR

4.6. Develop models for the application of methodologies for major product types

4.7. Distinguish between gross of reinsurance and net of reinsurance calculations, and understand the credit risk associated with the transfer of insurance risk

5. Produce calculations of profit arising under different valuation approaches (C6)

5.1. Explain the concept of expected profit margins

5.1.1. Differentiate between actual and estimated profit

5.1.2. Explain the impact of the valuation basis on the timing of the release of profit

5.2. Demonstrate the use of margins as a mechanism for the smooth release of expected profit

5.3. Determine distributable profit and understand the distinctions between accounting and distributable profit

5.4. Apply methodologies for the deferment of acquisition costs

5.5. Develop models for recognising the emergence of profit for various product types

6. Evaluate how liability values are reflected in accounts (C7)

7. Produce an appropriate set of assumptions for valuation purposes (C8)

7.1. Explain the need for valuation assumptions

7.2. Assess the various purposes for which actuarial assumptions are used

7.3. Assess sources of information in setting assumptions

7.4. Distinguish between the different categories of assumptions

7.5. Determine the impact of, and justification for, valuation assumptions changes

7.5.1. Analyse the impact of assumption changes

7.5.2. Apply and explain the use of alternative methodologies for incorporating assumption changes

8. Evaluate an appropriate valuation method, model, and actuarial basis for defined benefit and defined contribution funds (C9)

8.1. Explain the principles guiding the selection of a valuation approach

8.2. Distinguish between different valuation methodologies for retirement products and consider the circumstances where each might be applied

8.3. Describe the different paces of funding associated with different valuation approaches and recognize that valuation methods do not affect actual experience

9. Design a valuation process including data, systems, and controls (C10)

9.1. Understand the steps and key interactions of a valuation process

9.2. Evaluate and apply data grouping techniques for use in valuation

9.3. Assess and apply techniques for the validation of valuation input data

9.4. Evaluate the features of valuation systems

9.5. Assess and select valuation modelling applications

9.6. Develop a plan for a year-end valuation

9.6.1. Assess and adapt the key stages in the planning process for an annual valuation for a life company with a diverse portfolio

9.6.2. Assess the business considerations and impacts of the external environment for each step of the valuation process

9.7. Evaluate the results of a valuation, internally and externally

9.7.1. Assess and select appropriate levels of aggregation for intermediate results and reporting

9.7.2. Select appropriate validation techniques to apply to the results of a valuation

9.7.3. Compare to previous valuation results to evaluate reasonableness and explain changes

9.7.4. Decide on appropriate presentation and reporting for the communication of results to internal and external stakeholders

10. Evaluate asset valuation methods and asset liability management strategies (C11)

10.1. Differentiate between the different types of assets on the balance sheet of a life company or retirement fund

10.2. Assess the nature of the relationship between assets and liabilities and the need for consistency in their valuation approaches

10.3. Explain the key steps and actuarial analyses required in the setting of investment strategies

10.4. Explain asset liability management strategies

10.5. Evaluate and apply asset valuation methodologies for a range of asset types

11. Produce a risk-based capital model or a life insurer and retirement fund (C12)

11.1. Explain the need for capital

11.2. Explain the purpose of capital

11.3. Evaluate the impact of an entity's financial strength on its stakeholders

11.4. Explain the benefits of a risk-based approach to calculating capital

11.5. Compare and contrast regulatory and economic capital

11.6. Evaluate an entity's capital requirements under a three-pillar approach

11.6.1. Explain the three-pillar approach to quantifying, qualifying, and reporting on risk-based capital

11.6.2. Explain the different types of capital that can be used by entities

11.6.3. Analyse the range of risks faced by an entity and their impact on the entity's capital requirement

11.6.4. Explain the adjustments to asset and liability values that may be required in determining a company's capital base

11.6.5. Calculate an entity's capital base and its prescribed capital amount, using a range of risk assessment and aggregation techniques

11.7. Evaluate the implications of capital adequacy standards for a life insurer and retirement fund

11.7.1. Explain components of the internal capital adequacy assessment process

11.8. Explain the role of the regulator under a three-pillar capital approach

11.9. Explain the role of disclosure under a three-pillar capital approach

12. Design a process to determine the sources of surplus (C13)

12.1. Explain why an analysis of surplus may be undertaken

12.2. Assess methodologies for the analysis of surplus

12.3. Evaluate an analysis of surplus arising

12.4. Explain outputs of the process through communication with stakeholders

13. Produce economic valuations (appraisal values) (C14)

13.1. Determine the reasons for obtaining an appraisal value

13.2. Identify and determine the components of an appraisal value

13.3. Discuss the key issues involved in determining an appraisal value

13.4. Demonstrate the steps required to calculate an appraisal value

13.5. Compare and contrast the different methods available for arriving at an appraisal value

13.6. Prepare an analysis of the change in appraisal values and communicate the results

13.7. Explain why an analysis may be undertaken

13.8. Compare and contrast the change in appraisal value with the reported profit

13.9. Explain issues associated with the change in appraisal values

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As the peak professional body for actuaries in Australia, the Actuaries Institute represents the profession to government, business and the community. Our members work in a wide range of fields including insurance, superannuation and retirement incomes, enterprise risk management, data analytics and AI, climate change and sustainability, and government services.

Actuaries use data for good by harnessing the evidence to navigate into the future and make a positive impact. They think deeply about the issue at hand, whether it's advising on commercial strategy, influencing policy, or designing new products. Actuaries are adept at balancing interests of stakeholders, clients and communities. They're called upon to give insight on complex problems and they'll look at the full picture. Actuaries analyse the data and model scenarios to form robust and outcome-centred advice.

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