



Subject F101

Health and Care Principles

Fellowship Principles Syllabus

For the 2023 Examinations

October 2022



Aim

The aim of the Health and Care Principles subject is to instill in successful candidates the ability to apply, in simple situations, the principles of actuarial planning and control needed in health and care matters on sound financial lines.

Links to other subjects

Subject A111 (CS1) — Actuarial Statistics: provides a basic grounding in statistics.

Subject A212 (CS2) — Risk Modelling and Survival Analysis: covers some stochastic models used in health and care.

Subject A311 — Actuarial Risk Management: covers the general underlying principles affecting all specialisms.

Subject F201 — Health and Care Applications will use the principles developed in this subject to develop a deeper understanding of health and care insurance business and South African practice.

Objectives

On the successful completion of this subject the candidate will be able to:

- (a) Describe the principal terms in health and care insurance and health economics.
- (b) Describe the main types of health and care insurance contracts:
 - private medical insurance
 - health cash plans
 - critical illness insurance
 - long-term care insurance
 - group and individual covers
 - main example variations of contracts issued.
- (c) Outline the principles by which health and care insurance contracts are designed and the interests of the various stakeholders in the process:
- (d) Discuss the operating environments in which health and care insurance products and services are traded:
 - distribution channels
 - regulatory and taxation regimes
 - professional guidance
 - economic and political influences.
- (e) Explain the likely role of the State in the provision of alternative or complementary health and care protection:



- objectives of State healthcare provision
- methods of State healthcare provision
- funding approaches
- impact of different sectors of society.

(f) Explain the components of a well-functioning healthcare system:

- classification of primary, secondary and tertiary care
- key supply-side providers
- main funders of healthcare and main funding models.

(g) Analyse the mechanics between the funding and supply of healthcare:

- risks and risk sharing between funders and providers
- role and functions of managed care organisations
- reimbursement methods of suppliers.

(h) Understand and apply the techniques used in pricing health and care insurance products in terms of:

- data availability
- assumptions used
- equation of value and formula approach
- cashflow techniques
- group risk assessments
- options
- guarantees
- external influences.

(i) Evaluate the nature of the risks facing the insurer:

- data
- claim rates
- claim amounts
- investment performance
- expenses and inflation
- persistency
- mix of new business
- volume of new business
- guarantees and options
- competition
- actions of management
- counterparties
- legal, regulatory and tax developments
- reputation
- internal audit failures/fraud



- physical risks
- aggregation and concentration of risk
- catastrophes
- non-disclosure and anti-selection.

(j) Understand how insurers use reinsurance to manage their risks and the reinsurance products involved:

- reasons for reinsurance
- types of reinsurance
- determination of the retention level
- individual vs accumulated risks.

(k) Describe other ways in which insurers manage their risks:

- underwriting
- claims management
- data checks
- product design
- managing the distribution process and customer relationship
- managed care
- managing other counterparties
- other internal processes

(l) Describe the principal modelling techniques appropriate to health and care insurance:

- asset-liability modelling
- objectives and basic features of a health insurance model
- uses of models
- multi-state modelling
- comparison of formula and cashflow approach
- sensitivity analysis
- deterministic and stochastic models
- outstanding claim provision
- generalised linear models
- risk mechanics.

(m) Describe the assumptions that are crucial to pricing and valuation:

- morbidity
- mortality
- persistency
- claim amount
- expenses
- inflation
- investment return
- taxes
- solvency margins
- profit requirements.



- (n) Describe the purposes of reserves, solvency capital requirements and embedded values, and the methodologies by which they are calculated for a health and care insurer, including:
- role of statistical and individual case estimates
 - setting assumptions, including a comparison with those used in pricing
 - market consistent valuation
 - the interplay between the strength of the supervisory reserves and the level of solvency capital required
 - Value at Risk (VaR) capital assessment
 - comparison of passive and active valuation approaches.
- (o) Explain the purposes and practices of supervisory reporting:
- principles of setting statutory reserves
 - difference in assumptions from pricing
 - sensitivity analysis
 - strength of basis
 - valuation of assets and consistency
 - solvency margins and solvency assessment
 - risk-based capital.
- (p) Describe the principles of investment underpinning health and care insurance.
- (q) Describe the principles by which the experience from a health insurance operation is used to refocus business planning:
- reasons for monitoring experience
 - data required
 - analysis of mortality, morbidity, claim amount, and persistency rates
 - analysis of expenses, new business and investment experience
 - reason for analysis of surplus and analysis of embedded value profit
 - use of results to revise the models used and assumptions used.

End of Syllabus