ACTUARIAL SOCIETY OF SOUTH AFRICA

Subject F107

Banking Principles

Fellowship Principles Syllabus

For the 2026 Examinations

Oct 2025

Aim

The aim of the Banking Principles subject is to instil in successful candidates the key principles of banking and to introduce students to banking risks and to quantification of the main risks in banking: capital risk, liquidity risk, credit risk, market risk and operational risk.

Links to other subjects

It assumes knowledge of the risk management techniques introduced in Subject A311 – Actuarial Risk Management, as well as the knowledge instilled in most of the A1, A2 and NS subjects.

Topics are further built upon in Subject F207 (Banking Applications).

This subject is well suited for Associates and students interested in F106 – Enterprise Risk Management and for Associates and students contemplating careers in the banking industry.

This subject offers complementary knowledge and a broader skillset for Associates studying other subjects at Applications level, such as F205 – Finance and Investment Applications, or Associates interested in capital and market risk management within F202 – Life Insurance Applications or F204 – Pensions and Related Benefits Applications.

Objectives

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

1. Demonstrate knowledge and understanding of the operations of a banking institution

1. Demonstrate understanding of the business model of a banking institution, including:

1.1 Assets and liabilities, capital and liquidity, main risks
1.2 Money supply and the role of banks in monetary policy

2. Demonstrate understanding that actuarial techniques and skills can be applied in banking:

2.1 Different terms used, but many similarities with equivalent matters in insurance
2.2 Difference between accounting approaches, regulatory approaches and risk approaches

3. Demonstrate understanding of the role that banks play in the economy, including:

3.1 Encourage domestic business and international trade by making payments easier
3.2 Encourage economic growth by taking deposits and making loans

3.3 Encourage economic growth by supporting investment in new products and services

4. Demonstrate understanding of the ways in which the performance of banks varies over economic cycles, including:

4.1 Higher credit losses in periods of recession
4.2 The impact of floating and fixed interest rates on net interest income

5. Describe different types of banks, including:

5.1 Commercial banks
5.2 Wholesale-funded banks
5.3 Investment banks
5.4 Universal banks
5.5 Challenger banks
5.6 Alternative banks
5.7 Mutual banks
5.8 Development banks
5.9 Central banks

6. Describe various activities carried out by banks, including:

6.1 Retail banking activities and various products offered
6.2 Corporate banking activities and various products offered
6.3 Investment banking activities and various products offered
6.4 Activities carried out by central banks

7. Demonstrate understanding and knowledge of a bank's sources of revenue, including:

7.1 Net interest income from banking book operations
7.2 Non-interest revenue from banking book operations
7.3 Trading income from trading book operations

8. Demonstrate understanding and knowledge of a bank's cost base, including:

8.1 Operational expenses
8.2 Cost of credit
8.3 Cost of capital
8.4 Tax

9. Demonstrate understanding of a bank's financial statements, including:

9.1 Bank income statement and components
9.2 Bank balance sheet and components
9.3 Financial ratio analysis
9.4 Accounting for impairments
9.5 Fair value accounting

10. State and define the main types of capital that a bank may hold, including:

10.1 Regulatory capital and TLAC
10.2 Economic capital
10.3 Available capital or book capital
10.4 Risk-weighted assets (RWAs)
10.5 Treatment of minority interest

11. Outline various sources of funds that banks use to fund their operations, including:

11.1 Deposit taking
11.2 Wholesale market funding
11.3 Central bank funding
11.4 Tier I capital
11.5 Tier II capital
11.6 TLAC

12. State and define types of financial and non-financial risks faced by banks, including:

12.1 Capital risk
12.2 Liquidity risk
12.3 Systemic risk
12.4 Credit risk
12.5 Counterparty credit risk/CVA risk
12.6 Credit concentration risk
12.7 Market risk
12.8 Interest rate risk in the banking book
12.9 Operational risk
12.10 Currency risk
12.11 Pension obligation risk
12.12 Prepayment risk
12.13 Residual risk
12.14 Model risk
12.15 Business risk
12.16 Environmental, Sustainability and Governance risk
12.17 Regulatory risk
12.18 Conduct risk
12.19 Cybercrime and fraud risk
12.20 Technology risk
12.21 Political risk

2. Demonstrate knowledge and understanding of international banking regulations that affect banks globally and nationally

1. Demonstrate understanding of the Basel Accord (1998), including:

1.1 Quantification of credit risk
1.2 Minimum capital requirements
1.3 Shortcomings of the Basel Accord

2. Demonstrate understanding of the Basel II regulations (2006) and their implications for banking operations, including:

2.1 Quantification of credit risk, market risk and operational risk
2.2 Standardised approach or banks' own internal models
2.3 Three pillars
2.3.1 Pillar 1: Quantification of risks and minimum capital requirements (rules-based)
2.3.2 Pillar 2: Supervisory review process (not rules-based), including ICAAP (capital adequacy)
2.3.3 Pillar 3: Public disclosures to support market discipline
2.4 Shortcomings of the Basel II regulations

3. Demonstrate understanding of the Basel III regulations (2010) and their implications for banking operations, including:

3.1 New definition of Tier 1 (CET1, AT1) capital and Tier 2 capital
3.2 Revised minimum capital requirements
3.3 Counterparty credit risk, credit value adjustment (CVA)
3.4 Capital conservation buffer
3.5 Countercyclical capital buffer
3.6 Additional buffer for systemically important banks (SIBs)
3.7 Leverage ratio
3.8 Liquidity coverage ratio (LCR)
3.9 Net stable funding ratio (NSFR)
3.10 ILAAP (liquidity adequacy)

4. Demonstrate understanding of the final revisions to the Basel III regulations (effective 1 January 2023) and their implications for banking operations, including:

4.1 Revised standardised approach for credit risk
4.2 Revised internal models approach for credit risk
4.3 Revised credit value adjustment (CVA) framework
4.4 Revised approach for market risk
4.5 Revised approach for operational risk
4.6 Output floor
4.7 Leverage ratio buffer for SIBs
4.8 Total loss-absorbing capacity (TLAC) and minimum requirement for own funds and eligible liabilities (MREL).

5. Demonstrate understanding of how supra-national and national bodies regulate and supervise banks in their jurisdiction, including:

5.1 Overview of supra-national and national regulatory bodies
5.2 Capital Requirements Regulation (EU)
5.3 Recovery and resolution (EU)
5.4 National regulations and guidance
5.5 Additional capital requirements and/or capital buffers
5.6 'Twin peaks' regulation
5.7 Deposit insurance regulation

5.8 Data protection regulation, including GDPR/POPI
5.9 Risk data aggregation, including BCBS 239

6. Demonstrate understanding of international accounting standards that affect banks, including:

6.1 International Financial Reporting Standard 9 (IFRS 9)

3. Demonstrate knowledge and understanding of the role of risk management in a banking operation

1. Discuss the role of high-level risk management in a banking operation.

2. Demonstrate high-level understanding of the main risks in a banking operation, including:

2.1 Credit risk
2.2 Market risk/Interest rate risk in the banking book
2.3 Operational risk
2.4 Capital risk
2.5 Liquidity risk

3. Discuss the impact on banking operations of the aggregation of risk, including:

3.1 Diversification
3.2 Concentration
3.3 Correlation

4. Explain and discuss the process of controlling risks in a banking operation, including by:

4.1 Setting loan underwriting criteria
4.2 Setting risk appetite and limits for metrics
4.3 Allocating risk-based capital

5. Demonstrate how risk modelling may be used in banking risk management, including:

5.1 Frequency and severity modelling for credit and operational risk
5.2 Statistical modelling for portfolio management
5.3 Survival models for credit risk management
5.4 Market implied probability of default and survival curves
5.5 Asset-liability modelling for balance sheet management
5.6 Cash-flow models for budgeting and balance sheet management
5.7 Discounted cashflow models for product pricing
5.8 Use of machine learning algorithms in banking risk management
5.9 Control cycle for all models

6. Demonstrate understanding of how risks in a banking operation may be mitigated and/or managed, including by:

6.1 Future new business, sales of assets
6.2 Hedging
6.3 Securitisation

4. Demonstrate knowledge and understanding of products offered in a banking operation.

1. Describe the products and services offered by retail and commercial banks.

2. Describe the main products and services offered by investment banks.

5. Demonstrate knowledge and understanding of the assessment of product pricing and profitability in a banking operation, including:

1. Demonstrate knowledge and understanding of the ways in which banks manage product pricing, including:

1.1 Typical pricing structures of loans and deposits
1.2 How banks price loans for risk

2. Demonstrate knowledge and understanding of the pricing of deposit products offered by banks, including:

2.1 Pricing considerations
2.2 The importance of price elasticity
2.3 The role of term liquidity premium in savings

3. Demonstrate knowledge and understanding of the pricing of loan products offered by banks, including:

3.1 Retail banking loans
3.2 Corporate banking loans
3.3 Loans used in investment banking transactions

4. Demonstrate knowledge and understanding of the use of discounted cashflow models to assess the pricing and profitability of banking products, including:

4.1 Setting up a discounted cashflow model
4.2 Assumptions used in a discounted cashflow model
  4.2.1 Income
  4.2.2 Expected credit losses
  4.2.3 Operational costs
  4.2.4 Amount of capital required to support loans
  4.2.5 Funding costs and funds transfer pricing
  4.2.6 Discount rate (for calculation of NPV)
4.3 Uses of a discounted cashflow model
  4.3.1 Risk-based pricing
  4.3.2 Marginal pricing and contribution to overheads
  4.3.3 Lifetime ROE/RAROC

5. Show knowledge and understanding of factors that influence the pricing of investment banking products, including:

5.1 Overview of investment banking
5.2 Pricing of transactional products
5.3 Pricing of advisory services
5.4 Pricing of derivative products
5.4.1 Understanding the key concept of risk-neutral pricing
5.4.2 Understanding how to price a forward contract
5.4.3 Understanding option pricing and the mechanism of dynamic hedging
5.4.4 Understanding the effect that operational considerations have on derivative pricing
5.5 Understanding how the assumptions break down
5.6 Banks need to consider the overall profitability of a customer relationship

6. Demonstrate knowledge and understanding of managing overall profitability, including:

6.1 Importance of profit and loss account
6.2 Need to manage asset and liability pricing over time

6. Demonstrate knowledge and understanding of credit risk measurement in a banking operation

1. Describe and explain the credit risk measurement process for banking book exposures, including:

1.1 Qualitative factors: retail and non-retail exposures
1.1.1 Retail
1.1.2 Non-retail
1.2 Quantitative factors: internal and external ratings
1.2.1 Pricing, provisioning and capital management
1.2.2 Retail, non-retail, and specialised lending exposures
1.2.3 Regulatory requirements for internal rating systems
1.2.4 Consistency: internal ratings and external credit rating agencies
1.3 Credit risk parameters for risk and regulatory approaches
1.3.1 Parameters for non-defaulted assets
1.3.1.1 Probability of default (PD)
1.3.1.2 Expected loss given default (LGD)
1.3.1.3 Expected exposure at default (EAD)
1.3.2 Parameters for defaulted assets
1.3.3 Impaired assets
1.4 Default events and measures (retail and non-retail)
1.4.1 Default events and measures: specialised lending
1.4.2 Default events and measures: cross-border lending
1.4.3 Impairment versus default
1.5 Product credit risk measurement
1.6 Credit risk terminology
1.6.1 Lending exposure (legal entity)
1.6.2 Group entity (obligor)

1.6.3 Facilities/accounts (transactions) – draw down profile
1.6.4 Collateral
1.6.5 Guarantees – parent, director, corporate, sovereign
1.6.6 On-balance-sheet netting
1.6.7 Derivatives and hedging
1.7 Prudential standards: parameters and models
1.7.1 Pillar I (minimum capital requirements):
1.7.1.1 Standardised approach (current methodology and revised approach)
1.7.1.2 Internal ratings-based (IRB) approach
1.7.2 Pillar II (supervisory review)
1.7.3 Pillar III (market discipline)
1.8 Expected credit losses under IFRS 9
1.8.1 Stage allocation
1.8.2 Provisions for expected credit losses
1.8.3 Impact on profit and loss account, balance sheet and capital
1.8.4 Expected credit losses over economic cycle
1.9 Model development
1.9.1 Probability of default (PD)
1.9.2 Loss given default (LGD)
1.9.3 Exposure at default (EAD)
1.9.4 Determining capital requirements from risk parameters
1.9.5 Differences between IRB models and IFRS 9 models

2. Describe and explain various approaches to measuring credit risk

2.1 Single exposures
2.1.1 Credit scoring/statistical models
2.1.2 Structural models (Merton/KMV)
2.1.3 Reduced form models
2.2 Credit portfolio models
2.2.1 Credit migration models (CreditMetrics)
2.2.2 Copula-based approaches

3. Describe and explain trading book credit exposures, including:

3.1 Basel III, including counterparty credit risk and credit valuation adjustment (CVA)
3.2 Swaps and exotic exposures
3.3 Potential future exposures and regulatory add-ons
3.4 Netting
3.5 Market implied probability of default and survival curves
3.5.1 Default and survival curves
3.5.2 Closed form analytical approximations versus Monte Carlo simulation

7. Demonstrate knowledge and understanding of the measurement of interest rate risk and market risk in a banking operation

1. Describe and discuss the measurement and management of interest rate risk in a banking operation, including:

1.1 Interest rate risk
1.1.1 Forms of interest rate risk
1.1.2 Yield curves
1.2 Interbank rates
1.3 Risk measurement and sensitivity
1.4 Boundary between the banking book and the trading book

2. Describe sources of interest rate risk in the banking book of a banking operation, including:

2.1 Mismatching of assets and liabilities
2.2 Options e.g. early repayment of loans
2.3 Basis risk (use of different reference rates)

3. Demonstrate knowledge and understanding of interest received and paid by a banking operation, including:

3.1 Net interest income, net interest margin and net interest spread
3.2 Usefulness and limitations of net interest margin
3.3 Net interest income over an economic cycle

4. Demonstrate understanding of the measurement of interest rate risk in the banking book of a banking operation, including:

4.1 Interest rate shift
4.2 Economic value (EV) changes
4.3 Earnings at risk (EaR) measures

5. Describe and discuss the measurement and management of market risk in a banking operation, including:

5.1 Market risk definition
5.2 Value at Risk (VaR)
5.3 Market and systemic risk and funding
5.4 Hedging: tools, strategy and risks
5.4.1 Forward rate agreements
5.4.2 Futures
5.4.3 Swaps
5.4.4 Options

6. Demonstrate understanding of the measurement of market risk in the trading book of a banking operation, including:

6.1 Standardised approach
6.2 Internal models approach (IMA)
6.3 Revised market risk framework (effective 1 January 2023)
6.4 Fundamental review of the trading book (FRTB)

7. Demonstrate understanding of measures used to address the limitations of Value-at-Risk methodologies, including:

7.1 Observed distributions versus normal/lognormal distributions
7.2 Expected shortfall
7.3 Tail Value-at-Risk

8. Describe the hedging and proprietary trading activities of a banking operation, including:

8.1 Hedging activities
8.2 Proprietary trading activities
8.3 Impact of changes to regulations since the banking crisis of 2007-08.

9. Demonstrate knowledge and understanding of the potential impact of market risk in the pension fund of a banking operation:

9.1 Overview of the risk issue associated with the pension fund obligation
9.2 Quantification of pension obligation risk
9.3 Potential impact of bank's capital available

8. Demonstrate knowledge and understanding of operational risk measurement in a banking operation

1. Demonstrate understanding of operational risk loss event types in banking, including conduct risk.

2. Demonstrate understanding of measuring operational risk loss experience in a banking operation, including:

2.1 Operational risk measurement concepts
  2.1.1 Operational risk events
  2.1.2 Amounts of losses, by type
  2.1.3 Dates of losses, by type
  2.1.4 Grouping of loss events
  2.1.5 Model granularity, model validation and monitoring
  2.1.6 Distribution assumptions
  2.1.7 Correlation and dependence
  2.1.8 Data integration

3. Demonstrate understanding of the measurement of operational risk in a banking operation, including:

3.1 Standardised approach - Basic indicator approach (BIA)
3.2 Internal model approach - Advanced measurement approach (AMA)
  3.2.1 Loss distribution approach (LDA)
    3.2.1.1 Qualitative input and model validation
    3.2.1.2 Key risk indicators

4. Demonstrate understanding of the Basel III standardised approach for measuring operational risk in a banking operation (which will replace current approaches from 1 January 2023), including:

4.1 Demonstrate understanding of issues in using internal models to quantify operational risk, including conduct risk

5. Demonstrate knowledge of how a bank complies with anti-money laundering (AML) regulations and of regulations around sanctions and politically exposed persons.

9. Demonstrate knowledge and understanding of bank capital and its measurement

1. Demonstrate knowledge and understanding of why a banking operation needs to hold capital, including:

1.1 Bank business model, balance sheet and capital
1.2 Treatment of bank capital
1.3 Understanding the difference between capital and liquidity
1.4 Understanding the difference between expected losses and unexpected losses
1.5 Capital measurement, TLAC and regulation

2. Demonstrate knowledge and understanding of the various amounts of capital that banks must hold, and of the extent to which they should be held in the form of CET1 capital, including:

2.1 Minimum capital requirements (Pillar 1)
2.2 Additional capital requirements (Pillar 2)
2.3 Total capital requirements
2.4 Capital conservation buffer (CCoB)
2.5 Countercyclical capital buffer (CCyB)
2.6 Capital buffer determined by stress testing versus CCoB plus CCyB
2.7 Systemic risk buffer (systemically important banks)

3. Discuss key considerations as to how much capital a banking operation should hold, including:

3.1 Regulatory capital requirements
3.2 Leverage ratio
3.3 Rating agency considerations
3.4 Analyst considerations
3.5 Capital need by peer group of banks
3.6 Outlook for GDP and expected credit losses

10. Demonstrate knowledge and understanding of bank liquidity and its measurement

1. Outline and describe key elements of liquidity risk and liquidity risk measurement, including:

1.1 Defining liquidity
1.2 Sources of liquidity
1.3 Liquidity risk metrics

1.3.1 Loan-to-deposit ratio (LDR)
1.3.2 1-week and 1-month liquidity ratios
1.3.3 Cumulative liquidity model
1.3.4 Liquidity risk factor
1.3.5 Concentration report and funding source report
1.3.6 Inter-entity lending report
1.4 Stock of liquid assets

2. Describe the process of modelling cash inflows and outflows in liquidity risk management, including:

2.1 Measuring contractual maturity gaps
2.2 Modelling behaviour of demand deposits
2.3 Modelling pre-payment behaviour
2.4 Modelling behaviour of contingency funding obligations

3. Discuss ascertaining behavioural tenor including:

3.1 Deposits behavioural tenor
3.2 Loans behavioural tenor
3.3 Behaviouralisation exercise

4. Discuss Basel III liquidity risk metrics, including:

4.1 Overview of Basel III liquidity risk framework
4.2 Liquidity coverage ratio (LCR)
4.2.1 Assumptions on liabilities outflow
4.2.2 High-quality liquid assets (HQLA)
4.2.3 Sample stressed outflow report
4.2.4 Example outflow assumptions
4.2.5 Example LCR calculation
4.2.6 Factors which determine the liquidity value of deposits
4.2.7 LCR and liabilities strategy
4.2.8 Deposits analysis template
4.3 Net stable funding ratio (NSFR)
4.3.1 Understanding the calculation
4.3.2 Addressing NSFR compliance

End of Syllabus