COURSE STRATEGY GUIDE

ILA 101 – Pricing and Introduction to Valuation and Risk Management

Nov 2026/Mar 2027/Jul 2027

This Course Strategy Guide is intended to provide candidates with an approach for organizing the course readings for studying the various sections of the syllabus; however, while this Guide can be a valuable aid in preparation, the material in this Guide will not be tested.

I. Purpose of this Course

Candidates should review the materials for this course with the goal of understanding the key risks of individual life insurance and annuity products and how these risks impact all actuarial functions supporting these products, beginning with product design and pricing, followed by assumption setting and monitoring, product management, financial reporting, and finally risk management. Candidates should understand that this course is an introduction to the most critical concepts for an Individual Life and Annuity actuary to understand and that the 201 courses will expand on these topics.

The Individual Life and Annuities courses cover many of the products individual life and annuities actuaries may support throughout their careers. These include individual life products, individual annuity products, structured settlements, pensions, and benefit riders. These products represent a foundation of individual life insurance and annuity product concepts and are based on many of the same core actuarial concepts, but the specifics of the products life and annuities actuaries will work with over the course of their career will evolve with the regulatory and market changes.

II. Recommended Approach in Preparing for the Course Assessment

This course is intended to provide an introduction to the pricing and valuation of individual life insurance and annuity products. Our recommended study approach is to first read the descriptions of the Learning Objectives and Learning Outcomes in the syllabus, then read the syllabus study materials in the order presented for each course topic section. The recommended order is purposeful.

Keep in mind that each exam question is created by starting first with one or a combination of the Learning Objectives and Learning Outcomes. The insights or lessons learned from the syllabus study materials are there to help the candidate develop and apply a solution that best fits within the context of the exam question. Candidates are expected to apply the techniques or insights that they learn from the syllabus study materials to new real-world problems. The candidate uses the study material as a tool to gain insights about the Learning Objectives and Learning Outcomes.

We hope the following overview helps candidates connect the themes in the readings into a more integrated, comprehensive understanding of the whole syllabus.

III. Course Syllabus Learning Objectives and Learning Outcomes

The syllabus for ILA101 has been organized into five major areas of focus. Details of the learning objectives, learning outcomes and syllabus study materials associated with the learning outcomes for each of the five topic sections can be found in the appendix.

1. Design and Pricing
2. Assumption Development and Experience Studies
3. Product Management
4. Introduction to Valuation
5. Introduction to Assets and Risk Management

The candidate should be familiar with the Learning Outcomes as described in the syllabus and repeated in this Guide. These Learning Outcomes represent the knowledge candidates are expected to be able to perform after completing this course and will guide the assessment committee when developing questions.

The course of readings builds the candidate's knowledge; each was selected to explain or illustrate one or more Learning Objective(s). While studying the syllabus material, candidates may want to consider both the organizational approach provided by this Guide and refer to the Learning Outcomes to remain focused on the educational goals being evaluated.

Within the major areas of focus, the following represents one way that the candidate might relate syllabus material by topic.

Topic 1: Design and Pricing

The Design and Pricing Learning Objective introduces candidates to product design, pricing, and profitability. Candidates are welcome to approach the readings in any order they prefer, but it will be useful to review the material in this section with an eye towards both similarities and differences between the product designs and the implications of those on pricing practices.

The first set of readings introduce individual life insurance and annuity product designs and features, as well as common practices a Pricing Actuary may use when pricing these products. Common life and annuity products are introduced in *ILA101-100-25: Life Products and Features* and *ILA101-101-25: Annuity Products and Features* respectively. *Structured Settlement Annuities* by the *SOA Research Institute, Mar, 2022,* introduces the key features of structured settlement products. Pension Risk Transfer is described in *Pension Risk Transfer in Canada and the U.S., SOA Research Institute, Mar, 2022. Registered Index-Linked Annuities, SOA Research Institute, Feb, 2022* provides a deeper dive into registered index-linked annuity products (RILAs). Lastly, commonly offered acceleration of benefits riders are described in *Life Insurance Acceleration Riders* by *Fillmore, SOA Reinsurance News, 2013 (pages 35-38)*. Understanding these features will

be critical for the Pricing Actuary to understand when measuring profitability, setting assumptions and complying with regulatory requirements.

The next readings, ILA101-102-25: *Understanding Profitability in Life Insurance* and ILA101-103-25: *Ch 9* of *Life Insurance Products and Finance, Atkinson and Dallas* and *ILA101-104-25*: *Ch 11, pp. 499-512 of Life Insurance Products and Finance, Atkinson and Dallas* explain common profitability metrics and earnings calculations a Pricing Actuary may use to measure the profitability of these products. Insurance companies use various financial metrics like Internal Rate of Return (IRR), Value of New Business (VNB), Embedded Value (EV), and Return on Equity (ROE) to price their products because each metric provides unique insights into different aspects of the product's profitability, risk, and value. These metrics allow insurers to evaluate products from multiple financial perspectives, helping them balance short-term profitability, long-term growth, risk management, and shareholder returns.

Lastly, *ILA101-105-25: Life Insurance and Annuity Non-forfeiture Practices* describes nonforfeiture benefits for individual life insurance and annuity products, which exists in life insurance and annuities to protect policyholders who may not continue making premium payments to ensure they still receive fair value from their policies. A Pricing Actuary must consider nonforfeiture when pricing and designing products.

Topic 2: Assumption Development and Experience Studies

The Assumption Development and Experience Studies Learning Objective introduces candidates to the actuarial assumptions that impact individual life insurance and annuity products and how actuaries use experience studies to develop these assumptions. Understanding these key assumptions is important, as they impact multiple actuarial functions, such as product pricing, setting reserves, and earnings projections.

The first set of readings introduce candidates to the key actuarial assumptions, such as mortality, policyholder behavior assumptions, interest, and expenses, impacting individual life insurance and annuity products. *ILA101-106-25: Experience Assumptions for Individual Life Insurance and Annuities* introduces the common assumptions needed in actuarial modeling. Then, *ILA101-107-25: Lapse Supported Insurance Analysis* and *CIA Educational Note: Selective Lapsation for Renewable Term Insurance Products, Feb 2017* dive deeper into the details of lapse assumptions. Next premium persistency assumptions are discussed in the *Report on Premium Persistency Assumptions Study of Flexible Premium Universal Life Products, May 2012, pp. 9-15.* The *Variable Annuity Guaranteed Living Benefits Utilization* by *SOA LIMRA Research, 2018, Executive Summary only (pp. 19-32)* reading further explores policyholder behavior as it relates to benefit utilization assumptions. Lastly, Term conversion assumptions and their implications are explained in *Term Conversions: Pricing and Reserving, Product Matters, Mar 2017* and *Predictive Models on Conversion Studies for the Level Term Premium Plans, SOA, Mar 2017.* When reading these materials, candidates should consider how some assumptions uniquely impact specific products.

The last set of readings describe commonly used methodologies for conducting experience studies to develop these assumptions. First, *Credibility Methods Applied to Life, Health, and*

Pensions, SOA, Feb 2019 (pp. 1-25 only) explains credibility methodology and includes *Credibility Methods Companion Excel Files* that candidates should be familiar with, as well. Next, methodologies for constructing mortality tables are discussed in *Table Development (February 2018, excluding Appendices C, D, F, G, & H)*. Additional key experience study calculations are then covered in *Experience Study Calculations, SOA, Oct 2016 (revised Mar 2024), Sections 2-4, 11, 12, 15, 17 & 18 (excluding 18.2, 18.8, and 18.9)*

Topic 3: Product Management

The Product Management Learning Objective discusses the life cycle of individual life insurance and annuity products, including the development, marketing, and ongoing management of a life insurance company's products. Effective product management helps insurers remain competitive and responsive to changing market dynamics while meeting customer needs. The actuary must also consider regulatory requirements around consumer protection as it pertains to sales practices and post-issue changes to policy components.

Life Insurance for the Digital Age: An End-to-End View, Product Matters, Nov 2017 and *The Art and Science of Life Insurance Distribution (Chapters 3-4, 6-7, and 10)* introduce the candidate to the individual life insurance and annuity product sales process, including underwriting processes and distribution strategies. These processes and strategies could impact policyholder behavior, assumptions and therefore, product profitability.

Life insurance provides several unique tax benefits. *ILA101-108-25: Chapters 1-2 of Life Insurance and Modified Endowments Under IRC §7702 and §7702A* by *Desrochers (2nd Edition)* and *Canadian insurance Taxation, Swales, et al., 4th Edition, 2015, Ch 10., The Taxation of Life Insurance Policies* explain how policyholders are taxed on life insurance policies and their consequent impacts on product design and inforce management.

Individual life insurance and annuity products contain charges and benefits that can change after policy issue, often referred to as non-guaranteed elements (NGEs). These are described in *Overview of Non-guaranteed Elements (NGEs), SOA Research Institute, Nov 2022.*

The final reading in this section, *Market Trends and Product Designs: Considerations when Interest Rates are Rising, Product Matters, Nov 2021,* discusses the impact of rising interest rates on individual life insurance and annuity products and product management strategies for mitigating these risks.

Topic 4: Introduction to Valuation

The Introduction to Valuation Learning Objective introduces candidates to financial reporting of individual life insurance and annuity products. Reserves are important to life insurance companies and actuaries because this is the required level of money to ensure promises are kept to policyholders when their benefits come due in the future.

Statutory Valuation of Individual Life and Annuity Contracts, Claire, D., Lombardi, L., and Summers, S., (5th Edition, 2018) Chapter 1 (excluding sections 1.1-9) and Chapter 11 (excluding sections 11.3.9 and 11.3.11) introduce the core principles and methodologies of Statutory

reporting for individual life and annuity products. *ILA101-110-25: Fundamentals of the Principle-Based Approach to Statutory Reserves for Life Insurance, Jul 2019, revised Apr 2025,* explains the concepts behind principle-based reserving. Statutory reserves ensure there is a sufficient amount of money set aside to pay claims in moderately adverse economic and mortality conditions. In contrast, a primary objective of reserves for IFRS and GAAP accounting is that reserve levels are proportionate with the amount of revenue collected by the insurance company. Due to these different purposes, each reserving and capital framework has different methods and assumptions. Candidates can approach this section how they chose, but it is generally helpful to focus on the similarities and difference across regulatory frameworks.

Chapters 1 and 5 of US GAAP for Insurers, Freedman, M., and Frasca, R., 3rd Edition, 2024 introduce the core principles and methodologies of GAAP Reporting for individual life insurance and annuity products with a deeper exploration into Term reserves. GAAP reporting provides shareholders, investors, and other stakeholders a view of the companies' economic position and profitability. GAAP is a framework that is largely used in the United States.

ILA101-111-25: Insurance Contracts First Impressions: 2020 Edition IFRS 17, KPMG, July 2020, (only Sections 1.1-1.2, 3.1, 5.1-5.3, 6.1-6.4, 14.1-14.2, 15.1-15.2, 17.1-17.3, & 20.1) introduces the core principles and methodologies of IFRS individual life and annuity principles. IFRS 17 sets the principles for recognizing, measuring, presenting, and disclosing insurance contracts to ensure companies provide relevant information that represents these contracts accurately to their stakeholders. It aims to increase transparency by requiring updated estimates and assumptions that reflect the timing of cash flows and uncertainties. IFRS is a framework that is similar to GAAP and is largely used in jurisdictions outside of the United States to provide a consistent view of financial reporting for insurance contracts across jurisdictions.

Regulatory Capital Adequacy for Life Insurance Companies: A Comparison of Four Jurisdictions, SOA Research Institute, Jul 2023 and companion Excel spreadsheet *Comparison of Jurisdictions Tool* provides an introduction to regulatory capital requirements across several jurisdictions, including the US (RBC), Canada (LICAT), Europe (Solvency II), and Bermuda (BSCR). Regulatory capital is critical in ensuring enough financial resources are set aside to absorb unexpected losses in adverse financial scenarios so insurance companies can remain solvent.

Topic 5: Introduction to Assets and Risk Management

The Introduction to Assets and Risk Management Learning Objective provides candidates with an introduction to asset and risk management strategies for individual life insurance and annuity products. Understanding various types of assets is important for actuaries because assets are invested to fund future claims for policyholders (up to the level of required reserves and beyond). Life insurance companies in particular care about assets because, unlike some other insurance types, life insurance is typically longer-term in nature. For example, many auto, property, and health insurance policies may cover potential claims for one year at time, with the option for the company to reprice to premiums that are higher or lower based on claims experience. For life insurance, some policies cover claims for multiple years, and therefore, where the life insurer invests their money and the amount of investment returns they earn can materially impact

profitability. Low investment returns can put life insurance companies at risk of not being able to meet future policy obligations.

In this section candidates will learn about asset and liability management (ALM) and investment strategies, risk management techniques for embedded options, and reinsurance. In this section, candidates should focus on understanding the risks of individual life insurance and annuity products and common strategies for mitigating these risks.

ILA101-112-25: Revisiting the Role of Insurance Company ALM within a Risk Management Framework describes the importance of ALM and investment strategy for financial and risk management. It discusses various methodologies and models for effective ALM, highlighting the impact of interest rate risks, liquidity risks, and market volatility on an insurer's balance sheet.

ILA101-113-25: Chapter 7 (sections 7.2-7.7 only) of Derivative Markets, McDonald, 3rd edition outlines the mechanics and pricing of interest rate forward contracts and futures, emphasizing their role in managing interest rate risk.

The next section of readings explains the options embedded in many common individual life insurance and annuity products and the risks these options introduce for the insurance companies that offer them. These readings include *ILA101-114-25: Ch. 16 of ALM Management of Financial Institutions, Tilman, 2003; Ch. 1 and Ch. 4 (excluding section 4.7)* of *An Introduction to Computational Risk Management of Equity-Linked Insurance)*, and *ILA101-115-25: Simulation of a Guaranteed Minimum Annuity Benefit, Freedman, 2019* including the accompanying Excel spreadsheet *(Stochastic Simulation of a GMAB Option)*.

Chapter 10 (pages 235-262 only, excluding exhibits 10-1 and 10-2) and Chapter 21 of *The Handbook of Fixed Income Securities by Fabozzi (9th Edition, 2021)* introduce candidates to the assets commonly found in a life insurer’s portfolio.

The final readings, *Chapter 1 (pages 3-16 and 22 only) and Chapters 4-5* of *Life, Health & Annuity Reinsurance, Tiller, John E., and Tiller, Denise, 4th Edition, 2015,* introduce candidates to key reinsurance concepts and the application of reinsurance as a risk management strategy.