

**Individual Life and Annuity Life Pricing – U.S. & Canada  
Fall 2014 & Spring 2015**

**Important Exam Information:**

<a href="#">Exam Registration</a>	Candidates may register online or with an application.
<a href="#">Order Study Notes</a>	Study notes are part of the required syllabus and are not available electronically but may be purchased through the online store.
<a href="#">Introductory Study Note</a>	The Introductory Study Note has a complete listing of all study notes as well as errata and other important information.
Case Study	A case study will not be used for this exam.
<a href="#">Past Exams</a>	Past Exams from 2000-present are available on SOA website.
<a href="#">Updates</a>	Candidates should be sure to check the Updates page on the exam home page periodically for additional corrections or notices.

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1.

**Learning Objectives**

The candidate will understand feasibility step of new product and how it drives design.

**Learning Outcomes**

The Candidate will be able to:

- a) Explain considerations for successful product development
- b) Describe tax regulation and perform calculations to evaluate compliance
- c) Identify gaps between product design and the operations of the company, its procedures and systems
- d) Describe U.S. non-forfeiture regulation and perform calculations to evaluate compliance
- e) Recommend ways to close the gaps between design and the internal/external constraints

**Resources**

- *Canadian Taxation of Life Insurance*, Marino, 7<sup>th</sup> Edition, Ch. 1, 3, 14, 15. Candidates may also use the 6<sup>th</sup> edition. The same chapter references apply.
- *Life Insurance and Modified Endowments Under Internal Revenue Code Sections 7702 and 7702A*, DesRochers, Ch. 2-4, 6
- [2008 Supplement to Life Insurance and Modified Endowments Under Internal Revenue Code Sections 7702 and 7702A](#), DesRochers, pp. 3-33, 40-56, 71-81, Appendices A-C
- *Life Insurance Products and Finance*, Atkinson & Dallas, Ch. 2
  
- LP-121-13: Life Insurance and Annuity Non-forfeiture Practices
- LP-122-13: NAIC Standard Non-forfeiture Law for Life Insurances: Sections 1-4, 5c, 6-9
- LP-123-13: NAIC Standard Non-forfeiture Law for Individual Deferred Annuities

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2.

**Learning Objectives**

The candidate will understand the design and purpose of various product types, benefits and features.

**Learning Outcomes**

The Candidate will be able to:

- a) Describe in detail product types, benefits and features
- b) Construct and recommend a design that is consistent with the market needs
- c) Evaluate the feasibility of the recommended design

**Resources**

- *Investment Guarantees*, Hardy, Ch. 1
- LP-102-07: Equity Indexed Annuities: Product Design and Pricing Consideration
- LP-105-07: Life and Annuity Products and Features
- LP-116-10: Variable Annuities, Kalberer and Ravindran , Ch. 5, 9-11
- LP-126-13: Pricing Critical Illness Insurance in Canada, Mooney
- LP-127-13: Product Design of Critical Illness Insurance in Canada
- [EIUL: The Devil's in the Details](#), Product Matters, Aug (62)2005
- [What's Backing Your Life Insurance Guarantee?](#), The Actuary Magazine, Feb 2005
- [Term Mortality and Lapses](#)", Product Matters, Aug (62) 2005,
- [Designing & Pricing LTCI Combination Insurance Products](#), Long Term Care News, Dec 2004
- [Annuity/LTCI Combinations](#) , Product Matters, Oct, 2009
- [ASOP #2 Non-guaranteed Charges or Benefits for Life Insurance Policies and Annuity Contracts](#), Mar 2004 (excl. Transmittal Memo and Appendices)
- [Quantification of the Natural Hedge Characteristics of Combination Life or Annuity Products Linked to Long-Term Care Insurance](#), March 2012
- [Life Insurance Acceleration Riders](#), Reinsurance Section Newsletter, July 2013, pp. 35 – 38
- [Interesting Challenges for Insurers](#), Product Matters, June 2012, pp. 10 – 16

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3.

**Learning Objectives**

The candidate will understand the relationship between the product features, their inherent risks, and the selection of appropriate pricing assumptions, profit measures and modeling approaches.

**Learning Outcomes**

The Candidate will be able to:

- a) Identify and explain the setting of an appropriate assumption for product characteristics such as the following:
  - i) Riders
  - ii) Policyholder dividends
  - iii) Equity linked
  - iv) Embedded options
  - v) Return of premium
  - vi) Secondary guarantees
  - vii) Payout annuity benefits
  - viii) Crediting methodology
  - ix) Other non-guaranteed elements
- b) Identify and explain the setting of an appropriate assumption for risk and other factors such as:
  - i) Available experience data
  - ii) The marketplace
  - iii) Underwriting
  - iv) Distribution channel characteristics
  - v) Reinsurance
  - vi) Expenses (fixed, variable, marginal)
  - vii) Taxes (income and premium)
  - viii) investment strategy
- c) Analyze results and recommend appropriate action from an array of risk and profit measures such as: Statutory, GAAP, Return on Equity, Market Consistent Pricing, Embedded Value
- d) Analyze the capital requirements for a product and describe solutions that optimize capital usage
- e) Describe when a stochastic model should be used, its advantages and disadvantages, how to build it and how to analyze its results

**Resources**

- *Investment Guarantees*, Hardy, Ch. 1, 2, 6, 7, 8, 12, 13

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- *Life Insurance Products and Finance*, Atkinson & Dallas, Ch. 3, 8, 10, 11, 13
- *Stochastic Modeling: Theory and Reality from an Actuarial Perspective*, IAA, Intro, I – I.B.2, I.E, II.A.1 – II.A.3, III, IV.A – IV.A.9
- Marketing for Actuaries: Individual Life and Health Insurance, Laporte, 2000 Edition, Ch. 4 and 6
  
- LP-102-07: Equity Indexed Annuities: Product Design and Pricing Consideration
- LP-107-07: Experience Assumptions for Individual Life Insurance and Annuities
- LP-110-07: Policyholder Dividends
- LP-113-09: Swiss Re, Economics of Insurance: How Insurers Create Value for Shareholders
- LP-114-09: CIA Research Paper, Life Insurance Costing and Risk Analysis, June 2008
- LP-119-11: A Comprehensive Guide to Measuring and Managing Life Insurance Company Expenses, Gutterman , Chapter 5
- LP-120-11: Session PD-5: Pricing Best Practices
- LP-129-14: Securitization – New Opportunities for Insurers and Investors, pp. 1-16, 24-26, 29 - 36
- LP-130-14: Life Insurance Underwriting in the United States Yesterday, Today and Tomorrow, Ch. 1, 2, 4, 5, 6, Klein
- [Report on the Lapse and Mortality Experience of Post-Level Premium Period Term Plans](#), (pp. 14-31, 40-51)
- [ASOP #2 Non-guaranteed Charges or Benefits for Life Insurance Policies and Annuity Contracts](#), Mar 2004 (excluding Transmittal Memo and Appendices)
- [Ending the Mortality Table](#), Living to 100 Symposium
- [The Response of Life Insurance Pricing to Life Settlements](#), Product Matters, Sep 2006
- [Mortality Table Slope – the Discussion Goes On](#), Product Matters Jul 2004
- [Product Development Challenges in a Principles-Based World](#), Product Matters, Oct 2007
- [Pricing in a Return-on-Equity Environment](#), TSA XXXIX, 1987
- [Risk Based Pricing – Risk Management at Point of Sale](#), Product Matters, June 2009
- [Predictive Modeling for Life Insurance](#)
- [Level Term Lapse Rates – Lessons Learned Here and in Canada](#), Product Matters, Oct 2011
- [Report on Premium Persistency Study of Flexible Premium Universal Life Products](#) Product Matters, Oct 2012, pp. 14 – 17
- [Term Conversions – A Reinsurer’s Perspective](#) Product Matters, June 2012, pp. 1, 5 – 6
- [Report on Pricing Using Market Consistent Embedded Value \(MCEV\)](#) Including Appendix 1

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4.

**Learning Objectives**

The candidate will understand actuarial requirements of product implementation and the monitoring of experience versus product assumptions.

**Learning Outcomes**

The Candidate will be able to:

- a) Describe and evaluate compliance with illustration regulation
- b) Evaluate, through the use of Experience Studies, how actual experience varies from expected relative but not limited to: mortality, investment returns, expenses and policyholder behavior such as policy and premium persistency
- c) Describe how to ensure the quality of data
- d) Recommend changes to non-guaranteed elements including policyholder dividends for deviations from expected

**Resources**

- LP-107-07: Experience Assumptions for Individual Life Insurance and Annuities
- LP-110-07: Policyholder Dividends
- LP-124-13: Role of the Actuary in Product Roll-out
- LP-125-13: NAIC Life Insurance Illustrations Model Regulation
- LP-128-13: CLHIA - Guideline Illustrations
- [Lapse Experience Under Lapse Supported Products](#), Product Matters, December 2005
- [Expected Mortality: Fully Underwritten Canadian Individual Life Insurance Policies](#), CIA Education Note, July 2002 (excl. Appendices)
- [Experience Data Quality: How to Clean and Validate Your Data"](#) (Exclude Appendices) SOA/LIMRA Research Report
- [ASOP #2 Non-guaranteed Charges or Benefits for Life Insurance Policies and Annuity Contracts](#), Mar 2004 (excl. Transmittal Memo and Appendices)
- [ASOP #23 Data Quality](#) (excluding Transmittal Memo and Appendices)
- [The Interstate Compact](#) Product Matters, Feb 2013, pp. 8 – 11