

# Individual Life and Annuity Life Pricing Exam

Fall 2018/Spring 2019

## 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	There is no case study 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.

*Recognized by the Canadian Institute of Actuaries*

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<b>1. Topic: Products and Markets</b>
<b>Learning Objectives</b>
The candidate will understand various insurance products, markets, and regulatory regimes.
<b>Learning Outcomes</b>
The Candidate will be able to: <ul style="list-style-type: none"><li>a) Describe insurance product types, benefits, and features including reinsurance</li><li>b) Evaluate insurance markets, consumer needs, distribution channels, and regulatory regimes</li><li>c) Construct, evaluate and recommend product designs that are consistent with market needs, tax and regulatory requirements, and company business objectives<ul style="list-style-type: none"><li>i. Evaluate the feasibility of proposed designs. Recommend designs</li></ul></li></ul>
<b>Resources</b>
<ul style="list-style-type: none"><li>• <i>Investment Guarantees</i>, Hardy, Mary, 2003<ul style="list-style-type: none"><li>○ Ch. 1</li></ul></li><li>• <i>Life Insurance Products and Finance</i>, Atkinson, David B. and Dallas, James W., 2000<ul style="list-style-type: none"><li>○ Ch. 2</li></ul></li><li>• <i>Life Insurance and Modified Endowments Under Internal Revenue Code Sections 7702 and 7702A</i>, DesRochers, Christian J., et. al., 2<sup>nd</sup> Edition, 2015<ul style="list-style-type: none"><li>○ Ch. 1-3, 6 and 7 (pp. 205-252 up to Appendix 7.1)</li></ul></li><li>• <i>The Art and Science of Life Insurance Distribution</i>, Bennett, Douglas J. and Zultowski, Walter H., 2014<ul style="list-style-type: none"><li>○ Ch. 3-7</li></ul></li><li>• Canadian Insurance Taxation, Swales, et. al., 4<sup>th</sup> Edition, 2015<ul style="list-style-type: none"><li>○ Ch. 10 and 11</li></ul></li><li>• LP-102-07: Equity Indexed Annuities: Product Design and Pricing Consideration</li><li>• LP-105-07: Life and Annuity Products and Features</li><li>• LP-121-13: Life Insurance and Annuity Non-forfeiture Practices</li><li>• LP-122-13: NAIC Standard Non-forfeiture Law for Life Insurances: sections 1-4, 5c, 6-9</li><li>• LP-123-13: NAIC Standard Non-forfeiture Law for Individual Deferred Annuities</li><li>• LP-126-13: Pricing Critical Illness Insurance in Canada, Mooney</li><li>• LP-127-13: Product Design of Critical Illness Insurance in Canada</li><li>• LP-131-15: Deconstructing Long-Term Care Insurance, Insights, Towers Watson, Nov 2012</li><li>• LP-134-15: Digital Distribution in Insurance: A Quiet Revolution, Swiss Re, 2014</li></ul>

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- LP-138-16: International Association of Insurance Advisors Global Insurance Market Report, 2015, pp. 6 -27
- LP-139-16: The Connection Between Military & Business Strategies
- LP-140-16: Life Insurance Product Development Innovation and Optimization
- LP-141-16: Introduction to Reinsurance, excluding appendices
- LP-147-17: Life Insurance: Focusing on the Consumer
- [Quantification of the Natural Hedge Characteristics of Combination Life or Annuity Products Linked to Long-Term Care Insurance](#), Mar 2012
- [Is This Correction Good For Life Insurance?](#), Product Matters, Feb 2011
- [Life Insurance Acceleration Riders](#), Fillmore, Reinsurance News, Jul 2013, pp. 35-38
- [Regulatory Risk and North American Insurance Organizations](#), SOA Research, Aug 2014 (sections 1, 3-7)
- [Impact of VM-20 on Life Insurance Product Development](#), SOA Research, Nov 2016 (excluding Appendices)
- [Impact of VM-20 on Life Insurance Product Development – Phase 2](#), SOA Research, Jul 2017 (sections 4-7 only)

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**2. Topic: Design and Pricing**

**Learning Objectives**

The candidate will understand the relationship between product features, inherent risks, and the methods and measures to design and price products.

**Learning Outcomes**

The Candidate will be able to:

- a) Identify, assess, and develop appropriate assumptions to reflect factors such as product characteristics, risks, policyholder behavior, and company actions
  - i. Describe and apply the uses of predictive modeling
- b) Assess and critique performance measures, risk measures, and modeling approaches. Recommend their uses in product management
- c) Develop and evaluate a product's performance, capital requirements, tax and regulatory requirements, and risk profile

**Resources**

- *Investment Guarantees*, Hardy, Mary, 2003
  - Ch. 1, 2, 6, 7, 8, 12 and 13
- *Life Insurance Products and Finance*, Atkinson, David B. and Dallas, James W., 2000
  - Ch. 10, 11 and 13
- *Stochastic Modeling: Theory and Reality from an Actuarial Perspective*, IAA, 2010
  - Intro, I-I.B.2, I.E, II.A.1-II.A.3, III, IV.A-IV.A.9 and IV.C.3
- 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: Economics of Insurance: How Insurers Create Value for Shareholders
- LP-114-09: CIA Research Paper, Life Insurance Costing and Risk Analysis, Jun 2008
- LP-116-10: Variable Annuities, Kalberer and Ravindran , Ch. 5, 9-11
- LP-130-14: Life Insurance Underwriting in the United States, Klein, Ch. 1, 2, 4, 5 and 6
- LP-132-15: Lapsed-Based Insurance, pp. 1-28
- LP-136-15: Marketing for Actuaries: Individual Life and Health Insurance, Laporte, 2000 Edition, Ch. 4, pp. 12-31
- LP-143-16: Breaking the Ice – Using Transparency to Thaw the Securitization Market, Feb 2011
- [ASOP 2: Non-guaranteed Charges or Benefits for Life Insurance Policies and Annuity Contracts](#), May 2011
- [Setting Assumptions, Exposure Draft, ASOP](#), Dec 2016

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- [The Use of Predictive Analytics in the Development of Experience Studies](#), The Actuary, 2015, pp. 26-34
- [What's Backing Your Life Insurance Guarantee?](#), The Actuary, Feb 2005
- [Ending the Mortality Table](#), Living to 100 Symposium
- [Pricing in a Return-on-Equity Environment](#), TSA XXXIX, 1987
- [The Response of Life Insurance Pricing to Life Settlements](#), Product Matters, Sep 2006, pp. 13-18
- [Mortality Table Slope – The Discussion Goes On](#), Product Matters, Jul 2004, pp. 11-12
- [Risk Based Pricing – Risk Management at Point of Sale](#), Product Matters, Jun 2009
- [Level Term Lapse Rates – Lessons Learned Here and in Canada](#), Product Matters, Oct 2011, pp. 11-14
- [Term Conversions – A Reinsurer's Perspective](#), Product Matters, Jun 2012, pp. 1, 5-6
- [Relationship of IRR to ROI on a Level Term Life Insurance Policy](#), Product Matters, Jun 2013
- [Term Mortality and Lapses](#), Product Matters, Aug 2005
- [Report on the Lapse and Mortality Experience of Post-Level Premium Period Term Plans](#), SOA, May 2014, pp. 3-98
- [Report on Premium Persistency Assumptions Study of Flexible Premium Universal Life Products](#), SOA, May 2012, pp. 9-15
- [Predictive Modeling for Life Insurance](#), Deloitte, Apr 2010
- [Application of Predictive Modeling Techniques in Measuring Policyholder Behavior in Variable Annuity Contracts](#), Towers Watson, Apr 2010, pp. 1-15
- [Modeling of Policyholder Behavior for Life and Annuity Products](#), SOA, 2014, pp. 9-16, 23-33, 45-67
- [Understanding the Volatility Experience and Pricing Assumptions in Long-Term Care Insurance](#), SOA, 2014, pp. 4-46
- [Variable Annuity Guaranteed Living Benefits Utilization](#), Executive Summary only, pp. 19- 32
- [CIA Educational Note: Best Estimates Assumptions for Expenses](#), Nov 2006, pp. 19-39
- [CIA Report: Lapse Experience Study for 10-Year Term Insurance](#), Jan 2014, pp. 6-32
- [CIA Report: Lapse Experience Under Universal Life Level Cost of Insurance Policies](#), Sep 2015, pp. 4-8

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<b>3. Topic: Product Management</b>
<b>Learning Objectives</b>
The candidate will understand actuarial requirements of product governance, implementation, operations, and management.
<b>Learning Outcomes</b>
The Candidate will be able to: <ul style="list-style-type: none"><li>a) Describe governance and implementation requirements, principles, and practices<ul style="list-style-type: none"><li>i. Describe and evaluate compliance with illustration regulations</li><li>ii. Describe operational requirements such as administration, marketing, reinsurance, and underwriting. Assess their impact on managing products</li></ul></li><li>b) Apply practices related to product management<ul style="list-style-type: none"><li>i. Describe how to monitor and evaluate actual experience such as benefits, persistency, and utilization including the use of experience studies and supplementary data sources</li><li>ii. Describe and assess practices related to data quality</li><li>iii. Recommend changes to non-guaranteed elements such as credited rates and policyholder dividends</li></ul></li><li>c) Design and evaluate product management strategies. Recommend the product strategy</li></ul>
<b>Resources</b>
<ul style="list-style-type: none"><li>• LP-107-07: Experience Assumptions for Individual Life Insurance and Annuities</li><li>• LP-110-07: Policyholder Dividends</li><li>• LP-124-13: Role of the Actuary in Product Roll-out</li><li>• LP-125-13: NAIC Life Insurance Illustrations Model Regulation</li><li>• LP-128-13: CLHIA - Guideline Illustrations</li><li>• LP-133-16: Testing for Adverse Selection in Life Settlements: The Secondary Market for Life Insurance Policies, Januario &amp; Naik, Jul 2014, pp. 1-20</li><li>• LP-144-16: Capital, Cash, Shareholder Value and Active In-Force Management, Feb 2014</li><li>• LP-145-16: Actuarial Guideline 49: A Closer Look</li><li>• LP-146-16: Actuarial Guideline 49 Post Standards Update</li><li>• <a href="#">ASOP 2: Non-guaranteed Charges or Benefits for Life Insurance Policies and Annuity Contracts</a>, May 2011</li><li>• <a href="#">ASOP 23: Data Quality</a>, May 2011 (excluding Transmittal Memo and Appendices)</li><li>• <a href="#">Lapse Experience Under Lapse Supported Policies: Updated Studies from the Canadian Institute of Actuaries</a>, Product Matters, Jun 2008</li><li>• <a href="#">The Interstate Compact: Speeding Up Speed-To-Market</a>, Product Matters, Feb 2013, pp. 8-11</li></ul>

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- [Evolving Strategies to Improve Inforce Post-Level Term Profitability](#), Product Matters, Feb 2015, pp. 23-29
- [Experience Data Quality: How to Clean and Validate Your Data](#), SOA/LIMRA Research Report (excluding Appendices)
- [Automated Life Underwriting: Phase 2](#), SOA, Aug 2010
- [2018 Generally Recognized Expense Table \(GRET\)](#), SOA, July 2017
- [Transition to a High Interest Rate Environment: Preparing for Uncertainty](#), SOA Research, Jul 2015, Executive Summary, sections C, D & E
- [CIA Educational Note: Expected Mortality: Fully Underwritten Canadian Individual Life Insurance Policies](#), Jul 2002 (excluding Appendices)