

# Individual Life and Annuity Life Pricing Exam

Fall 2017/Spring 2018

## 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.

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<b>1. Products and Markets</b>
<b>Learning Objectives</b>
<b>The candidate will understand various insurance products, markets, and regulatory regimes.</b>
<b>Learning Outcomes</b>
<b>The Candidate will be able to:</b>  a) Describe insurance product types, benefits, and features including reinsurance. b) Evaluate insurance markets, consumer needs, distribution channels, and regulatory regimes. 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>• Evaluate the feasibility of proposed designs. Recommend designs.</li></ul>
<b>Resources</b>
<ul style="list-style-type: none"><li>• <i>Investment Guarantees</i>, Hardy, Ch. 1</li><li>• <i>Life Insurance Products and Finance</i>, Atkinson &amp; Dallas, Ch. 2</li><li>• <i>Life Insurance and Modified Endowments Under Internal Revenue Code Sections 7702 and 7702A</i>, Second Edition, 2015, DesRochers, Ch. 1-3, 6 and 7 (pp.205-252 up to Appendix 7.1)</li><li>• <i>The Art and Science of Life Insurance Distribution</i>, Bennett and Zultowski, Chapters 3-7</li><li>• <i>Canadian Insurance Taxation</i>, Swales and Erinc, 4<sup>th</sup> Edition, 2015 Ch 10 &amp; 11</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><li>• LP-138-16: International Association of Insurance Advisors Global Insurance Market Report, 2015, pp. 6 -27</li><li>• LP-139-16: The Connection Between Military &amp; Business Strategies</li><li>• LP-140-16: Life Insurance Product Development Innovation and Optimization</li><li>• LP-141-16: Introduction to Reinsurance, excluding appendices</li><li>• LP-147-17: Life Insurance: Focusing on the Consumer</li><li>• <a href="#">Regulatory Risk and North American Insurance Organizations</a>, SOA Research, Aug 2014, Sections 1, 3 – 7</li></ul>

**Individual Life and Annuity Life Pricing – U.S. & Canada  
Fall 2017 & Spring 2018**

- [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 Development News, Feb 2011
- [Life Insurance Acceleration Riders](#), Fillmore, Reinsurance News, Issue 76, July 2013
- [Impact of VM-20 on Life Insurance Product Development](#), SOA Research, Nov 2016 (exclude appendices)

**Individual Life and Annuity Life Pricing – U.S. & Canada  
Fall 2017 & Spring 2018**

<b>2. Design and Pricing</b>
<b>Learning Objectives</b>
<b>The candidate will understand the relationship between product features, inherent risks, and the methods and measures to design and price products.</b>
<b>Learning Outcomes</b>
<p><b>The Candidate will be able to:</b></p> <ul style="list-style-type: none"> <li>a) Identify, assess, and develop appropriate assumptions to reflect factors such as product characteristics, risks, policyholder behavior, and company actions. <ul style="list-style-type: none"> <li>• Describe and apply the uses of predictive modeling.</li> </ul> </li> <li>b) Assess and critique performance measures, risk measures, and modeling approaches. Recommend their uses in product management.</li> <li>c) Develop and evaluate a product's performance, capital requirements, tax and regulatory requirements, and risk profile.</li> </ul>
<b>Resources</b>
<ul style="list-style-type: none"> <li>• <i>Life Insurance Products and Finance</i>, Atkinson &amp; Dallas, Ch. 10, 11, 13</li> <li>• <i>Investment Guarantees</i>, Hardy, Ch. 1, 2, 6, 7, 8, 12, 13</li> <li>• <i>Stochastic Modeling: Theory and Reality from an Actuarial Perspective</i>, IAA, Intro, I – I.B.2, I.E, II.A.1 – II.A.3, III, IV.A – IV.A.9, IV.B.2-4, IV.B.6, IV.C.3</li> <li>• LP-102-07: Equity Indexed Annuities: Product Design and Pricing Consideration</li> <li>• LP-107-07: Experience Assumptions for Individual Life Insurance and Annuities</li> <li>• LP-110-07: Policyholder Dividends</li> <li>• LP-113-09: Economics of Insurance: How Insurers Create Value for Shareholders</li> <li>• LP-114-09: CIA Research Paper, Life Insurance Costing and Risk Analysis, June 2008</li> <li>• LP-116-10: Variable Annuities, Kalberer and Ravindran , Ch. 5, 9-11</li> <li>• LP-130-14: Life Insurance Underwriting in the United States, Ch. 1, 2, 4, 5, 6, Klein</li> <li>• LP-132-15: Lapsed-Based Insurance, pp. 1 – 28</li> <li>• LP-136-15: Marketing for Actuaries: Individual Life and Health Insurance, Laporte, 2000 Edition, Ch. 4, pp. 12–31</li> <li>• LP-142-16: Malcolm Life Enhances Its Variable Annuities, 2010</li> <li>• LP-143-16: Breaking the Ice – Using Transparency to Thaw the Securitization Market, Feb 2011</li> <li>• <a href="#">The Use of Predictive Analytics in the Development of Experience Studies</a> - The Actuary 2015 vol12-iss4 pp. 26-34</li> <li>• <a href="#">Report on the Lapse and Mortality Experience of Post-Level Premium Period Term Plans</a>, May 2014, pp. 3 – 98</li> <li>• <a href="#">ASOP #2 Non-guaranteed Charges or Benefits for Life Insurance Policies and Annuity Contracts, May 2011</a></li> </ul>

## Individual Life and Annuity Life Pricing – U.S. & Canada Fall 2017 & Spring 2018

- [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
- [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](#), Deloitte
- [SOA Research, Application of Predictive Modeling Techniques in Measuring Policyholder Behavior in Variable Annuity Contracts](#), Apr 2010, pp. 1 – 15
- [Level Term Lapse Rates – Lessons Learned Here and in Canada](#), Product Matters, Oct 2011
- [SOA - Society of Actuaries - Product Development Section Newsletter \(Product Matters!\)](#), Term Conversions – A Reinsurer’s Perspective, June 2012, pp. 1, 5 – 6
- [CIA Educational Note: Best Estimates Assumptions for Expenses](#) – November 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, p. 4 – 8
- SOA – Society of Actuaries, [Report on Premium Persistency Assumptions Study of Flexible Premium Universal Life Products](#), Milliman, May 2012, pp. 9 – 15
- SOA – Society of Actuaries, [Modelling of Policyholder Behavior for Life and Annuity Products](#), 2014, pp. 9 – 16, 23- 33, 45 – 67
- SOA – Society of Actuaries, [Understanding the Volatility Experience and Pricing Assumptions in Long-Term Care Insurance](#), 2014, pp. 4 – 46
- [Relationship of IRR to ROI on a Level Term Life Insurance Policy](#), Product Matters, June 2013
- [What’s Backing Your Life Insurance Guarantee?](#), The Actuary Magazine, Feb 2005
- [Term Mortality and Lapses](#), Product Matters, Aug (62) 2005,
- SOA LIMRA Research 2013 – [Variable Annuity Guaranteed Living Benefits Utilization](#), Executive Summary only (pp. 19 – 32)
- [Proposed ASOP on Setting Assumptions](#), Dec 2016

**Individual Life and Annuity Life Pricing – U.S. & Canada  
Fall 2017 & Spring 2018**

<b>3. Product Management</b>
<b>Learning Objectives</b>
<b>The candidate will understand actuarial requirements of product governance, implementation, operations, and management.</b>
<b>Learning Outcomes</b>
<b>The Candidate will be able to:</b> <ul style="list-style-type: none"><li>a) Describe governance and implementation requirements, principles, and practices.<ul style="list-style-type: none"><li>• Describe and evaluate compliance with illustration regulations.</li><li>• 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>• 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>• Describe and assess practices related to data quality.</li><li>• 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</li><li>• LP-135-15: Update on the Interstate Insurance Compact, 2014</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="#">Lapse Experience Under Lapse Supported Policies: Updated Studies from the Canadian Institute of Actuaries</a>, Issue 71, June 2008</li><li>• <a href="#">Expected Mortality: Fully Underwritten Canadian Individual Life Insurance Policies</a>, CIA Education Note, July 2002 (excl. Appendices)</li><li>• <a href="#">Experience Data Quality: How to Clean and Validate Your Data</a> (Exclude Appendices) SOA/LIMRA Research Report</li></ul>

**Individual Life and Annuity Life Pricing – U.S. & Canada  
Fall 2017 & Spring 2018**

- [ASOP # 2 Non-guaranteed Charges or Benefits for Life Insurance Policies and Annuity Contracts](#), May 2011
- [ASOP #23 Data Quality](#) (excl. Transmittal Memo and Appendices), December 2016
- [SOA - Society of Actuaries - Product Development Section](#), The Interstate Compact, Product Matters, Feb 2013, pp. 8 – 11
- SOA – Society of Actuaries, [Automated Life Underwriting: Phase 2](#), Deloitte, Aug 2010
- [Evolving Strategies to Improve Inforce Post-Level Term Profitability](#), Product Matters, Feb 2015, pp. 23-29
- [2016 Generally Recognized Expense Table \(GRET\)](#), SOA, July 2015
- [SOA - Transition to a High Interest Rate Environment: Preparing for Uncertainty](#), SOA Research, July 2015, Executive Summary, Sections C, D & E