



Individual Life and Annuities Life Pricing Exam

Fall 2018/Spring 2019

Important Exam Information:

[Exam Registration](#)

Candidates may register online or with an application.

[Order Study Notes](#)

Study notes are part of the required syllabus and are not available electronically but may be purchased through the online store.

[Introductory Study Note](#)

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.

[Past Exams](#)

Past Exams from 2000-present are available on SOA website.

[Updates](#)

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

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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: <ul style="list-style-type: none">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">i. Describe and apply the uses of predictive modelingb) Assess and critique performance measures, risk measures, and modeling approaches. Recommend their uses in product managementc) Develop and evaluate a product's performance, capital requirements, tax and regulatory requirements, and risk profile
Resources
<ul style="list-style-type: none">• <i>Investment Guarantees</i>, Hardy, Mary, 2003<ul style="list-style-type: none">○ Ch. 1, 2, 6, 7, 8, 12 and 13• <i>Life Insurance Products and Finance</i>, Atkinson, David B. and Dallas, James W., 2000<ul style="list-style-type: none">○ Ch. 10, 11 and 13• <i>Stochastic Modeling: Theory and Reality from an Actuarial Perspective</i>, IAA, 2010<ul style="list-style-type: none">○ 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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3. Topic: Product Management
Learning Objectives
The candidate will understand actuarial requirements of product governance, implementation, operations, and management.
Learning Outcomes
The Candidate will be able to: <ol style="list-style-type: none">a) Describe governance and implementation requirements, principles, and practices<ol style="list-style-type: none">i. Describe and evaluate compliance with illustration regulationsii. Describe operational requirements such as administration, marketing, reinsurance, and underwriting. Assess their impact on managing productsb) Apply practices related to product management<ol style="list-style-type: none">i. Describe how to monitor and evaluate actual experience such as benefits, persistency, and utilization including the use of experience studies and supplementary data sourcesii. Describe and assess practices related to data qualityiii. Recommend changes to non-guaranteed elements such as credited rates and policyholder dividendsc) Design and evaluate product management strategies. Recommend the product strategy
Resources
<ul style="list-style-type: none">• 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• LP-133-16: Testing for Adverse Selection in Life Settlements: The Secondary Market for Life Insurance Policies, Januario & Naik, Jul 2014, pp. 1-20• LP-144-16: Capital, Cash, Shareholder Value and Active In-Force Management, Feb 2014• LP-145-16: Actuarial Guideline 49: A Closer Look• LP-146-16: Actuarial Guideline 49 Post Standards Update• ASOP 2: Non-guaranteed Charges or Benefits for Life Insurance Policies and Annuity Contracts, May 2011• ASOP 23: Data Quality, May 2011 (excluding Transmittal Memo and Appendices)• Lapse Experience Under Lapse Supported Policies: Updated Studies from the Canadian Institute of Actuaries, Product Matters, Jun 2008• The Interstate Compact: Speeding Up Speed-To-Market, Product Matters, Feb 2013, pp. 8-11

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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)