

# Individual Life and Annuity Design and Pricing Canada Fall 2011

## **Important Exam Information:**

<a href="#">Exam Date and Time</a>	A read-through time will be given prior to the start of the exam—15 minutes in the morning session and 15 minutes in the afternoon session.
<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.
<a href="#">Case Study</a>	This case study will also be provided with the examination. Candidates will not be allowed to bring their copy of the case study into the examination room.
<a href="#">Past Exams</a>	Past Exams from 2000-present are available on SOA web site.
<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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Exam: ILA - DP	
Learning Objectives	
<b>1. Describe the product development process.</b>	
Learning Outcomes	
The candidate will be able to:	
<p>A. Describe the steps in the iterative control cycle process within the context of product development;</p> <ul style="list-style-type: none"> <li>i) Idea Generation</li> <li>ii) Feasibility</li> <li>iii) Planning the Design</li> <li>iv) Actuarial Development <ul style="list-style-type: none"> <li>▪ Assumptions</li> <li>▪ Profitability Regulatory Issues</li> <li>▪ Choice of Model</li> </ul> </li> <li>v) Implementing and Monitoring the Product</li> </ul> <p>B. Describe how the actuary interacts with other stakeholders within the product development process</p>	
<b>Syllabus Resources</b>	
<ul style="list-style-type: none"> <li>• Atkinson &amp; Dallas, <i>Life Insurance Products and Finance</i>, Chapter 2, and Chapter 13, 13.1-13.2 only</li> <li>• ILA-D101-07: <i>Product Development Trends</i>, pp. 1-61</li> <li>• ILA-D104-07: Easton and Harris <i>Actuarial Aspects of Individual Life Insurance and Annuity Contracts</i>, chapter 3, The Product Development Process</li> <li>• ILA-D111-07: LOMA, <i>Product Design for Life Insurance &amp; Annuities</i>, Chapter 1</li> <li>• 2006 Marketing and Distribution Section Product Implementation Survey, Product Matters! June 2007 <a href="http://www.soa.org/library/newsletters/newsdirect/2007/june/2002007june.aspx">http://www.soa.org/library/newsletters/newsdirect/2007/june/2002007june.aspx</a></li> <li>• Bob Shapiro 50<sup>th</sup> Anniversary monograph “<i>The Process of Premium Formulation</i>” <a href="http://www.soa.org/library/research/transactions-of-society-of-actuaries/1982/january/tsa82v3418.pdf">http://www.soa.org/library/research/transactions-of-society-of-actuaries/1982/january/tsa82v3418.pdf</a></li> </ul>	

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Exam: ILA - DP	
Learning Objectives	
<b>2. Understand the drivers of product design (the idea generation step).</b>	
Learning Outcomes	
For a given context or product, the candidate will be able to:	
A. Identify customers and their needs – internal and/or external	
B. Analyze how the following drive product design	
<ul style="list-style-type: none"><li>• Company strengths and weaknesses</li><li>• Economic forces</li><li>• Marketplace demographics</li><li>• Consumer behavior</li><li>• Distribution channel behavior</li><li>• Competition</li></ul>	
C. Describe the questions to ask the sales and marketing (incl. Agents, brokers and direct marketing)	
<b>Syllabus Resources</b>	
<ul style="list-style-type: none"><li>• <i>Marketing for Actuaries</i>, 2000 Edition, All Chapters</li><li>• LOMA, <i>Insurance Marketing</i>, 2010, Ch. 2-5 and 7-8</li> <li>• ILA-D120-11: Session PD-5: Pricing Best Practices</li></ul>	

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Exam: ILA – DP	
Learning Objectives	
<b>3. Understand the feasibility step of new product and how it drives design.</b>	
Learning Outcomes	
For a given context or product, the candidate will be able to:	
<ul style="list-style-type: none"> <li>A. Explain considerations for prudent and practical decision making</li> <li>B. Describe tax regulation and perform calculations to evaluate compliance</li> <li>C. Describe how investment policy and policy loans can impact design</li> <li>D. Identify gaps between the product design and the operations of the company and procedures and systems</li> <li>E. Recommend ways to close the gaps between design and the internal/external constraints.</li> </ul>	
<b>Syllabus Resources</b>	
<ul style="list-style-type: none"> <li>• Atkinson &amp; Dallas, <i>Life Insurance. Products and Finance</i>, Chapters 2, 3, 8 and Ch. 13, Sections 13.3 and 13.4 only</li> <li>• Marino and Grobe, <i>Canadian Taxation of Life Insurance</i>, 5<sup>th</sup> Edition, , Chapters 1- 4, 14, 15, and 19</li> <li>• Hidden Costs of Administering Complex Products, Product Matters, November 2003 <a href="http://www.soa.org/library/newsletters/product-development-news/2003/november/pdn0311.pdf">http://www.soa.org/library/newsletters/product-development-news/2003/november/pdn0311.pdf</a></li> <li>• Hidden Costs of Product Complexity, Product Matters, November 2003 <a href="http://www.soa.org/library/newsletters/product-development-news/2003/november/pdn0311.pdf">http://www.soa.org/library/newsletters/product-development-news/2003/november/pdn0311.pdf</a></li> </ul>	

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Exam: ILA – DP	
Learning Objectives	
<b>4. Understand the design and purpose of various product types, benefits and features.</b>	
Learning Outcomes	
The candidate will be able to:	
<ul style="list-style-type: none"> <li>A. Describe in detail product types, benefits and features</li> <li>B. Construct and recommend a design that is consistent with the market needs identified in the idea generation step</li> <li>C. Evaluate the feasibility of the recommended design</li> </ul>	
<b>Syllabus Resources</b>	
<ul style="list-style-type: none"> <li>• Marino and Grobe, <i>Canadian Taxation of Life Insurance</i>, 5<sup>th</sup> edition, Chapter 9</li> <li>• Hardy, <i>Investment Guarantees</i>, Chapter 1</li>   <li>• ILA-D102-07: Equity Indexed Annuities: Product Design and Pricing Consideration</li> <li>• ILA-D105-07: Life and Annuity Products and Features</li> <li>• ILA-D116-10: <i>Variable Annuities</i>, Kalberer and Ravindran , Chapters 5,9,10,11</li> <li>• ILA-D610-08: Pricing Critical Illness Insurance in Canada, Mooney</li> <li>• ILA-D611-08: Product Design of Critical Illness Insurance in Canada</li>   <li>• EIUL: The Devil’s in the Details, Product Matters, August (62)2005, <a href="http://www.soa.org/library/newsletters/product-development-news/2005/august/pdn0508.pdf">http://www.soa.org/library/newsletters/product-development-news/2005/august/pdn0508.pdf</a></li> <li>• Inflation-Indexed Income Annuities: Pricing Considerations and Investment Strategies, Simpa Baiye, Product Matters, September, 2006 <a href="http://www.soa.org/library/newsletters/product-development-news/2006/September/PDN0609.pdf">http://www.soa.org/library/newsletters/product-development-news/2006/September/PDN0609.pdf</a></li> <li>• What’s Backing Your Life Insurance Guarantee?, The Actuary, February 2005 <a href="http://www.soa.org/library/newsletters/the-actuary-magazine/2005/february/wha2005february.aspx">http://www.soa.org/library/newsletters/the-actuary-magazine/2005/february/wha2005february.aspx</a></li> <li>• VUL Secondary Guar: Catalyst for Sales Rebound, Product Matters, July (56)2003, <a href="http://www.soa.org/library/newsletters/product-development-news/2003/july/pdn0307.pdf">http://www.soa.org/library/newsletters/product-development-news/2003/july/pdn0307.pdf</a></li> <li>• Return of Premium Term, Product Matters July 2004 <a href="http://www.soa.org/library/newsletters/product-development-news/2004/july/pdn0407.pdf">http://www.soa.org/library/newsletters/product-development-news/2004/july/pdn0407.pdf</a></li> <li>• Term Mortality and Lapses, Product Matters, August (62) 2005, <a href="http://www.soa.org/library/newsletters/product-development-news/2005/august/pdn0508.pdf">http://www.soa.org/library/newsletters/product-development-news/2005/august/pdn0508.pdf</a></li> <li>• Designing &amp; Pricing LTCI Combination Insurance Products <a href="http://www.soa.org/library/newsletters/long-term-care/2004/december/ltc0412.pdf">http://www.soa.org/library/newsletters/long-term-care/2004/december/ltc0412.pdf</a></li> <li>• Combination Annuities – A Market to Get Into? , <i>Small talk Newsletter</i>, June 2009 <a href="http://www.actstrat.com/SmallTalkArticle.htm">http://www.actstrat.com/SmallTalkArticle.htm</a></li> <li>• Annuity/LTCI Combinations, <i>Product Matters</i>, October, 2009 <a href="http://www.soa.org/library/newsletters/product-development-news/2009/october/pro-2009-iss75.pdf">http://www.soa.org/library/newsletters/product-development-news/2009/october/pro-2009-iss75.pdf</a></li> </ul>	

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Exam: ILA - DP	
Learning Objectives	
<b>5. Understand the relationship between the product features, their inherent risks, and the selection of appropriate pricing assumptions, profit measures and modeling approaches.</b>	
Learning Outcomes	
The candidate will be able to:	
<p>A. Identify and explain the setting of an appropriate assumption for product characteristics such as the following:</p> <ul style="list-style-type: none"> <li>i) Riders</li> <li>ii) Policyholder Dividends</li> <li>iii) Equity linked</li> <li>iv) Embedded Options</li> <li>v) Return Of Premium</li> <li>vi) Secondary Guarantees</li> <li>vii) Payout Annuity Benefits</li> <li>viii) Crediting methodology</li> <li>ix) Other non-guaranteed elements</li> </ul> <p>B. Identify and explain the setting of an appropriate assumption for risks and other factors such as:</p> <ul style="list-style-type: none"> <li>i.) Available experience data</li> <li>ii.) The Marketplace</li> <li>iii.) Underwriting</li> <li>iv.) Distribution channel characteristics</li> <li>v.) Reinsurance</li> <li>vi.) Expenses (fixed, variable, marginal)</li> <li>vii.) Taxes (income and premium)</li> <li>viii.) Investment strategy</li> </ul> <p>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</p> <p>D. Analyze the capital requirements for a product and describe solutions such as securitization</p> <p>E. Describe when a stochastic model should be used, its advantages and disadvantages, how to build it and how to analyze its results</p>	
<b>Syllabus Resources</b>	
<ul style="list-style-type: none"> <li>• Atkinson &amp; Dallas, <i>Life Insurance Products and Finance</i>, Chapters, 3, 7, 8, 9, 10, 11, 13, 14</li> <li>• Hardy, <i>Investment Guarantees</i>, Chapters 1 (p.14 only), 2, 6, 8 (pp. 133-143 only), 9, 12, 13</li>   <li>• ILA-D102-07: Equity Indexed Annuities: Product Design and Pricing Consideration</li> <li>• ILA-D103-07: Price WaterHouse Coopers, Innovative Financing: Life Insurance Securitization, January 2006</li> <li>• ILA-D106-07: Gross Premiums for Disability Waiver Benefits</li> <li>• ILA-D107-07: Experience Assumptions for Individual Life Insurance and Annuities</li> <li>• ILA-D109-11: Moody's Investors Service Corporate Default and Recovery Rates-update Feb 2010</li> <li>• ILA-D110-07: Policyholder Dividends</li> <li>• ILA-D113-09: Swiss Re, Economics of Insurance: How Insurers Create Value for Shareholders</li> <li>• ILA-D114-09: CIA Research Paper, Life Insurance Costing and Risk Analysis, June 2008</li> <li>• ILA-D115-09: IAA Measurement of Liabilities for Life Insurance Contracts: Current Estimates and Risk Margins April 15, 2009 , pp. 75-112 only</li> <li>• ILA-D118-11: Traditional versus market Consistent Product Pricing, Senjeeb Kumar</li> <li>• ILA-D119-11: <i>A Comprehensive Guide to Measuring and Managing Life Insurance Company Expenses</i> , Ch. 5</li> </ul>	

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- ILA- D615-10: PD-15 Combo Product
- ILA- D617-10: PD29 Individual Product Structures: Product Development & Innovation for the Nov 8 meeting
- ASOP #1 (excluding transmittal memo and appendices) Nonguaranteed Charges or Benefits for Life Insurance Policies and Annuity Contracts  
[http://www.actuarialstandardsboard.org/pdf/asops/asop001\\_092.pdf](http://www.actuarialstandardsboard.org/pdf/asops/asop001_092.pdf)
- Report on the Lapse and Mortality Experience of post-Level Premium Period Term Plans, (pages 14-31 and 40-51 only)  
<http://www.soa.org/files/pdf/research-shock-lapse-report.pdf>
- Ending the Mortality Table (Living to 100 Symposium)  
<http://www.soa.org/library/monographs/retirement-systems/living-to-100-and-beyond/2005/january/m-li05-1-ix.pdf>
- The Response of Life Insurance Pricing to Life Settlements, Product Matters!, September 2006  
<http://www.soa.org/library/newsletters/product-development-news/2006/september/PDN0609.pdf>
- Mortality Table Slope – the Discussion Goes On, Product Matters July 2004  
<http://www.soa.org/library/newsletters/product-development-news/2004/july/pdn0407.pdf>
- Does Preferred Wear Off? Product Matters, July 2004  
<http://www.soa.org/library/newsletters/product-development-news/2004/july/pdn0407.pdf>
- Product Development Challenges in a Principles-Based World, Product Matters!, October 2007  
<http://www.soa.org/library/newsletters/product-development-news/2007/october/pm-0710.pdf>
- Across America, Valuation Actuaries Are Being Warmly Welcomed to Product Development Project Teams, Product Matters! February 2007  
<http://www.soa.org/library/newsletters/product-development-news/2007/February/PDN0702.pdf>
- Pricing in a Return-on-Equity Environment, TSA XXXIX, 1987  
<http://www.soa.org/library/research/transactions-of-society-of-actuaries/1987/january/tsa87v3911.pdf>
- Risk Based Pricing – Risk Management at Point of Sale “Product Matters” June 2009  
<http://www.soa.org/library/newsletters/product-development-news/2009/june/pro-2009-iss-74-lebel-risk.pdf>
- Stochastic Pricing, Session 62 TS from November 2005 SOA Annual Meeting  
<http://www.soa.org/files/pdf/062bk-annual05.pdf>
- Stochastic Pricing, RSA Vol 27, No 2 Session 86PD  
<http://www.soa.org/library/proceedings/record-of-the-society-of-actuaries/2000-09/2001/january/rsa01v27n286pd.pdf>
- Stochastic Pricing for Embedded Options in Life Insurance and Annuity Products, Milliman  
<http://www.soa.org/files/pdf/research-2009-stochastic-pricing.pdf>
- Conditional Stochastic Pricing, Product Matters, February 2010
- Predictive Modeling for Life Insurance, DeLoitte,  
<http://www.soa.org/files/pdf/research-pred-mod-life-batty.pdf>
- Predictive Modeling for Life Insurers: Application of Predictive Modeling Techniques in Measuring Policy Holder Behavior in Variable Annuity Products  
<http://www.soa.org/files/pdf/research-pred-mod-life-huet.pdf>

# Individual Life and Annuity Design and Pricing Canada Fall 2011

Exam: ILA - DP	TOPIC:
Learning Objectives	
<b>6. Understand actuarial requirements of product implementation and the monitoring of experience versus product assumptions.</b>	
Learning Outcomes	
<p>The candidate will be able to:</p> <ul style="list-style-type: none"> <li>A. Describe and evaluate compliance with illustration regulation and other policy form regulations</li> <li>B. Evaluate how through the use of Experience Studies, actual experience varies from expected relative, but not limited to mortality, investment returns, expenses and policyholder behavior such as policy and premium persistency</li> <li>C. Describe how to ensure the quality of data</li> <li>D. Recommend changes to non-guaranteed elements for deviations from expected</li> </ul>	
<b>Syllabus Resources</b>	
<ul style="list-style-type: none"> <li>• ILA-D107-07: Experience Assumptions for Individual Life Insurance and Annuities</li> <li>• ILA-D110-07: Policyholder Dividends</li> <li>• ILA-D111-07: LOMA, <i>Product Design for Life Insurance &amp; Annuities</i>, Chapter 2 pp. 31-33</li> <li>• ILA- D117-10: LOMA Life and Health Ins. Marketing, Third Edition, pp.242-243</li> <li>• ILA-D600-07: CIA Report – Lapse Experience Under Lapse Supported Policies (October 1999)</li> <li>• ILA-D601-08: CIA Report – Lapse Experience under Universal Life Level Cost of Insurance Policies, October 2007</li> <li>• ILA-D608-08: CIA Report – Lapse Experience under Term-to-100 Insurance Policies, October, 2007</li> <li>• ILA-D614-11: Guideline G6 –Illustrations, CLHIA</li>   <li>• ASOP #23, (exclude transmittal memo and appendices), Data Quality <a href="http://www.actuarialstandardsboard.org/pdf/asops/asop023_097.pdf">http://www.actuarialstandardsboard.org/pdf/asops/asop023_097.pdf</a></li> <li>• CIA Recommendations – Dividend Determination and Illustration”, June 1982 <a href="http://www.actuaries.ca/members/publications/1982/8207e.pdf">http://www.actuaries.ca/members/publications/1982/8207e.pdf</a></li> <li>• Report on the Lapse and Mortality Experience of Post-Level premium Period Term Plans <a href="http://www.soa.org/files/pdf/research-shock-lapse-report.pdf">http://www.soa.org/files/pdf/research-shock-lapse-report.pdf</a></li> </ul>	