

**Individual Life and Annuity Design and Pricing  
Canada  
Fall 2010**

**Important Exam Information:**

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

# Individual Life and Annuity Design and Pricing Canada Fall 2010

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>▪ Profit Measures</li> <li>▪ Regulatory Issues</li> <li>▪ Choice of Model</li> </ul> </li> <li>v) Launch and Monitor 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>, Chapters 1 and 2</li> <li>• ILA-D101-07: Product Development Trends, pp.46-61</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-D111-07: <i>Product Design for Life Insurance and Annuities</i>, Ch. 1</li></ul>	

# Individual Life and Annuity Design and Pricing Canada Fall 2010

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. Assess the risks underlying the design of insurance products and features within those products as well as suggestions as to the management of such risks.</li> <li>C. Describe tax regulation and perform calculations to evaluate compliance</li> <li>D. Describe non-forfeiture regulation and perform calculations to evaluate compliance</li> <li>E. Describe how investment policy and capital requirements can impact design</li> <li>F. Identify gaps between the product design and the operations of the company and procedures and systems</li> <li>G. 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>, Chapter 2-3</li> <li>• Marino and Grobe, <i>Canadian Taxation of Life Insurance</i>, 5<sup>th</sup> Edition, , Chapters 1, 3, 14, 15, and 19</li> <li>• ILA-D609-08: Notes on the Taxation of Life Insurance policies and Annuity Contracts, Witol with preamble by Ron Sanderson of CLHIA,</li> <li>• ILA-D614-09: Guideline G6 –Illustrations, CLHIA</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>	

# Individual Life and Annuity Design and Pricing Canada Fall 2010

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. Assess and construct designs to meet market needs</li> <li>C. Demonstrate how recommended designs are consistent with the idea and feasibility steps</li> </ul>	
<b>Syllabus Resources</b>	
<ul style="list-style-type: none"> <li>• Atkinson &amp; Dallas, <i>Life Insurance Products and Finance</i>, Chapter 13</li> <li>• Marino and Grobe, <i>Canadian Taxation of Life Insurance</i>, 5<sup>th</sup> edition, Chapters 2 , 4 and 9</li> <li>• Hardy, <i>Investment Guarantees</i>, Hardy, 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-D601-08: CIA Report – Lapse Experience under Universal Life Level Cost of Insurance Policies, October 2007</li> <li>• ILA-D600-07: CIA Report – Lapse Experience Under Lapse Supported Policies (October 1999)</li> <li>• ILA-D608-08: CIA Report – Lapse Experience under Term-to-100 Insurance Policies, October 2007</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>	

# Individual Life and Annuity Design and Pricing Canada Fall 2010

Exam: ILA - DP	
Learning Objectives	
<b>5. Understand the relationship between the product features 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) ROP</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 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, e.g. hedging</li> </ul> <p>C. Analyze results and recommend appropriate action from an array of 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 and how to interpret 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, 4, 5, 7, 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-D109-09: Moody's Investors Service Corporate Default and Recovery Rates</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 ,Chapter 6 and Appendices C and D</li> <li>• ILA- D615-10: PD-15 Combo Product</li> <li>• ILA- D616-10: PD-19 Life Hot Topics</li> <li>• ILA- D617-10: PD-29 Individual Product Structures: Product Development &amp; Innovation for the Nov 8 meeting</li> </ul>	

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- ASOP #1 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)
- 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>

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Exam: ILA - DP	TOPIC:
Learning Objectives	
<b>6. Understand the relationships between the product design and roll-out and between pricing assumptions and monitoring of products sold.</b>	
Learning Outcomes	
The candidate will be able to:	
<ul style="list-style-type: none"> <li>A. Describe product roll-out</li> <li>B. Describe and evaluate compliance with illustration regulation</li> <li>C. Explain how to monitor a product throughout its life-cycle.</li> <li>D. Evaluate how actual experience varies from expected relative to mortality, investment returns, expenses and policyholder behavior such as policy and premium persistency through the use of Experience Studies.</li> <li>E. Describe how to ensure the quality of data</li> <li>F. 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 pages 31-33</li> <li>• ILA- D117-10: LOMA Life and Health Ins. Marketing, Third Edition, pp.242-243</li> <li>• ASOP #23 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> </ul>	