

**Individual Life and Annuity Design and Pricing  
U.S.  
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.

**Individual Life and Annuity Design and Pricing  
U.S.  
Fall 2011**

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 iterative steps in the control cycle process within the context of product development;</p> <p style="margin-left: 20px;">i) Idea Generation</p> <p style="margin-left: 20px;">ii) Feasibility</p> <p style="margin-left: 20px;">iii) Planning the Design</p> <p style="margin-left: 20px;">iv) Actuarial Development</p> <p style="margin-left: 40px;">▪ Assumptions</p> <p style="margin-left: 40px;">▪ Profitability</p> <p style="margin-left: 40px;">▪ Regulatory Issues</p> <p style="margin-left: 40px;">▪ Choice of Model</p> <p style="margin-left: 20px;">v) Implementing and Monitoring the Product</p> <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, sections 13.1-13.2 only</li> <li>• ILA-D101-07: Product Development Trends, 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>	

**Individual Life and Annuity Design and Pricing  
U.S.  
Fall 2011**

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:	
<p>A. Identify customers and their needs – internal and/or external</p> <p>B. Analyze how the following drive product design</p> <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> <p>C. Describe the questions to ask the sales and marketing (incl. Agents, brokers and direct marketing)</p>	
<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>	

# Individual Life and Annuity Design and Pricing U.S. Fall 2011

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> <li>F. Describe non-forfeiture regulation and perform calculations to evaluate compliance</li> </ul>	
<b>Syllabus Resources</b>	
<ul style="list-style-type: none"> <li>• Atkinson &amp; Dallas, Life Ins. Products and Finance Chapters 2,3,8 and Ch. 13, 13.3and 13.4 only</li> <li>• <i>Life Insurance and Modified Endowments Under IRC §7702 and §7702A</i>, Chapters, 2, 3, 4, 6</li> <li>• <i>2008 Supplement to Life Insurance and Modified Endowments Under IRC §7702 and §7702A</i> <a href="http://www.soa.org/files/pdf/2008-life-ins-mod-end-supplement.pdf">http://www.soa.org/files/pdf/2008-life-ins-mod-end-supplement.pdf</a></li> <li>• ILA-D800-07: Life Insurance and Annuity Non-forfeiture Practices</li> <li>• ILA-D801-07: NAIC Standard Non-forfeiture Law for Life Insurances: Sections 1-4, 5c, 6-9</li> <li>• ILA-D802-07: NAIC Standard Non-forfeiture Law for Individual Deferred Annuities</li> <li>• Hidden Costs of Administering Complex Products, Nov. 2003 Issue of Product Matters <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 in Nov. 2003 Issue of Product Matters <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 U.S. Fall 2011

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>• Hardy, <i>Investment Guarantees</i>, 2003, Chapter 1 Investment Guarantees</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>• 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, Long Term Care News, December (13) 2004 <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? Small Talk Newsletter, June 2009, <a href="http://www.actstrat.com/SmallTalkArticle.htm">http://www.actstrat.com/SmallTalkArticle.htm</a></li> <li>• Annuity/LTCI Combinations , Product Matters, 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> <li>• ASOP #1 (excluding transmittal memo and appendices), Non-guaranteed Charges or Benefits for Life Insurance Policies and Annuity Contracts , March 2004 <a href="http://www.actuarialstandardsboard.org/pdf/asops/asop001_092.pdf">http://www.actuarialstandardsboard.org/pdf/asops/asop001_092.pdf</a></li> </ul>	

**Individual Life and Annuity Design and Pricing  
U.S.  
Fall 2011**

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 risk 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), Chapters 2, 6, 8, 9, 12 and 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 to 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> by Gutterman – Chapter 5</li> </ul>	

# Individual Life and Annuity Design and Pricing U.S. Fall 2011

- 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.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 (exclude appendices,  
<http://www.soa.org/files/pdf/research-2009-stochastic-pricing.pdf>
- Product Matters February 2010, Conditional Stochastic Pricing, Sun  
<http://www.soa.org/library/newsletters/product-development-news/2010/february/pro-2010-iss76-sun.pdf>  
<http://www.soa.org/library/newsletters/product-development-news/2010/february/pro-2010-iss76.pdf>
- Predictive Modeling in Life Insurance  
<http://www.soa.org/files/pdf/research-pred-mod-life-huet.pdf>
- Predictive Modeling for Life Insurance by Deloitte  
<http://www.soa.org/files/pdf/research-pred-mod-life-batty.pdf>

**Individual Life and Annuity Design and Pricing**  
**U.S.**  
**Fall 2011**

Exam: ILA - DP	
Learning Objectives	
<b>6. Understand actuarial requirements of product implementation and the monitoring of experience versus product assumptions.</b>	
Learning Outcomes	
The candidate will be able to:	
<ul style="list-style-type: none"> <li>A. Describe and evaluate compliance with illustration regulation and other policy form regulations</li> <li>B. Evaluate, through the use of Experience Studies, how 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 pages 31-33</li> <li>• ILA-D117-10: LOMA Life and Health Ins. Marketing, Third Edition, pp.242-243</li> <li>• ILA-D803-07: Role of the Actuary in Product Roll-out</li> <li>• ILA-D804-09: NAIC Life Insurance Illustrations Model Regulation</li>   <li>• ASOP #1, (excluding transmittal memo and appendices), Nonguaranteed Charges or Benefits for Life Insurance Policies and Annuity Contracts  <a href="http://www.actuarialstandardsboard.org/pdf/asops/asop001_092.pdf">http://www.actuarialstandardsboard.org/pdf/asops/asop001_092.pdf</a></li> <li>• ASOP #23 (excluding 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>• ASOP #41 (excluding transmittal memo and appendices), Actuarial Communications  <a href="http://www.actuarialstandardsboard.org/pdf/asops/asop041_120.pdf">http://www.actuarialstandardsboard.org/pdf/asops/asop041_120.pdf</a></li> <li>• Lapse Experience Under Lapse Supported Products, Product Matters, December (63) 2005  <a href="http://www.soa.org/library/newsletters/product-development-news/2005/december/pdn-2005-iss63-label.pdf">http://www.soa.org/library/newsletters/product-development-news/2005/december/pdn-2005-iss63-label.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>	