



**UNIVERSITI TEKNOLOGI MARA**

**ASC569: ACTUARIAL PRACTICE**

<b>Course Name (English)</b>	ACTUARIAL PRACTICE <b>APPROVED</b>
<b>Course Code</b>	ASC569
<b>MQF Credit</b>	4
<b>Course Description</b>	Students will apply all theories on the actuarial mathematics on the insurance practice. (i.e. pricing, valuation, product development etc.) This course is part of CT5 Contingencies component for IFoA old syllabus exemption.
<b>Transferable Skills</b>	Demonstrate ability to apply creative, imaginative and innovative thinking and ideas to problem solving. Demonstrate ability to investigate problems and provide effective solutions. Demonstrate ability to analyse issues/problems from multiple angles and make suggestions.
<b>Teaching Methodologies</b>	Lectures, Tutorial
<b>CLO</b>	CLO1 Describe the process of valuation of liabilities of a life and general assurance offices CLO2 Explain the financial management of a life and general assurance business CLO3 Identify the process of life insurance product design, product development and pricing CLO4 Analyze the pricing bases for general insurance contracts
<b>Pre-Requisite Courses</b>	No course recommendations

<b>Topics</b>	
<b>1. Valuation of Liabilities of a Life Assurance Office</b>	
1.1) Valuation of liabilities – purpose, processes, and types of data required for valuation. 1.2) Statutory valuation of liabilities – Malaysian Minimum Statutory Reserves. 1.3) Interpretation of recursive formulae of terminal reserves. 1.4) Calculation of fractional reserves using statutory basis	
<b>2. Life Insurance Fund Management</b>	
2.1) Sources of surplus. 2.2) Investment performance. 2.3) Interest, loading, mortality and other miscellaneous surplus. 2.4) Non-par and par fund, transfer to shareholder's fund.	
<b>3. Life Insurance Product Design and Development</b>	
3.1) Traditional and innovative life insurance products. 3.2) Circumstances leading to development of the products. 3.3) Product development processes – product, planning and design. 3.4) Regulations that affect product design and development.	
<b>4. Pricing of Life Insurance Product</b>	
4.1) Elements of pricing 4.2) Gross premium formulation 4.3) Asset-shares and comparison with traditional approach. 4.4) Development of asset-share formula with cash dividends. 4.5) Adjustment of formula with reversionary bonus 4.6) Profit margin 4.7) Sensitivity analysis	

**5. Values of Insurance Liabilities and Assets of a General Business Insurer**

- 5.1) Advantages and disadvantages of estimating known outstanding claims on a case by case basis from claim files.
- 5.2) Methods of estimating outstanding claims (Incurred But Not Reported, IBNR) – the basic chain ladder method, inflation adjusted chain ladder method, the separation method.
- 5.3) Unearned premium reserve.
- 5.4) Deferred acquisition costs and unearned premium reserve.
- 5.5) Additional reserve for unexplored risks, not covered by the unearned premium reserve.
- 5.6) Discounted technical reserves.

**6. Appropriate Pricing Bases for General Insurance Contracts**

- 6.1) Risk factors and rating differentials.
- 6.2) Premium rating basis which incorporates risk premium, commission, loading for profit and contingencies.
- 6.3) Experience rating techniques to derive a risk premium rate.
- 6.4) Profit-testing techniques

Assessment Breakdown	%
Continuous Assessment	40.00%
Final Assessment	60.00%

Details of Continuous Assessment	Assessment Type	Assessment Description	% of Total Mark	CLO
	Group Project	Group Project 1	5%	CLO1
	Group Project	Group Project 2	5%	CLO3
	Group Project	Group Project 3	5%	CLO4
	Test	Test 2	12%	CLO4
	Test	Test 1	13%	CLO1

Reading List	Recommended Text	<ul style="list-style-type: none"> <li>• S. David Promislow 2014, <i>Fundamentals of Actuarial Mathematics</i>, John Wiley &amp; Sons [ISBN: 9781118782460]</li> <li>• David C. M. Dickson, Mary Hardy, Mary R. Hardy, Howard R. Waters 2013, <i>Actuarial Mathematics for Life Contingent Risks</i>, Cambridge University Press [ISBN: 9781107044074]</li> </ul>
	Reference Book Resources	<ul style="list-style-type: none"> <li>• Hossack, I.B., Pollard, J.H. and Zehnwirth, B 1999, <i>Introductory Statistics with Applications in</i>, Cambridge University Press</li> <li>• Easton, E.E. 1999, <i>Actuarial Aspects of Individual Life Insuranc</i>, ACTEX Publications</li> <li>• Menge, W.O. &amp; Fischer, C.H. 1965, <i>The Mathematics of Life Insurance A Pract</i>, Ed., , Ulrichs Books Inc [ISBN: ]</li> <li>• Benjamin, B. 1977, <i>General Insurance</i>, Ed., , William Heinemann Ltd [ISBN: ]</li> <li>• Hart, D., Buchanan, R. And Howe, B. 2006, <i>Actuarial Practice of General Insurance</i>, Ed., , The Institute of Actuarial of Australia</li> </ul>
Article/Paper List	This Course does not have any article/paper resources	
Other References	This Course does not have any other resources	