



UNIVERSITI TEKNOLOGI MARA

ASC600: ACTUARIAL PRACTICE FOR LIFE INSURANCE AND TAKAFUL

Course Name (English)	ACTUARIAL PRACTICE FOR LIFE INSURANCE AND TAKAFUL APPROVED
Course Code	ASC600
MQF Credit	4
Course Description	This course introduces the students with all theories and applications on actuarial practice with related to life insurance and takaful. (i.e. pricing, valuation, product development etc.)
Transferable Skills	Demonstrate professional and analytical skills, knowledge and other competencies.
Teaching Methodologies	Lectures, Tutorial
CLO	<p>CLO1 Apply concepts and methods to solve problems related to actuarial practice for life insurance and takaful.</p> <p>CLO2 Develop and use problem-solving techniques in relation to actuarial practice for life insurance and takaful</p> <p>CLO3 Demonstrate lifelong learning skills in assignments related to actuarial practice for life insurance and takaful</p>
Pre-Requisite Courses	No course recommendations
Topics	
<p>1. Valuation of liabilities of a life insurance office</p> <p>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</p>	
<p>2. Life insurance fund management</p> <p>2.1) Sources of surplus 2.2) Investment performance 2.3) Interest, Loading, Mortality and Miscellaneous surpluses 2.4) Non-par and par fund transfer to shareholders' fund</p>	
<p>3. Life insurance product design and development</p> <p>3.1) Traditional and innovative life insurance products 3.2) Circumstances leading to development of the products 3.3) Product development process 3.4) Regulations of product design and development 3.5) Elements of pricing: expenses, interest, mortality considerations, withdrawals, profit margin, contingency margin 3.7) Gross premium formulation: Traditional approach, Asset-shares approach 3.8) Development of asset-shares formula with cash dividends 3.9) Adjustment of formula with reversionary bonus 3.10) Sensitivity analysis</p>	
<p>4. Family Takaful</p> <p>4.1) Introduction and history of family takaful in Malaysia 4.2) Family takaful products: Individual Plan, Mortgage and Credit Plan, Group Plan 4.3) Product development process for family takaful products 4.4) Product Pricing in Family Takaful – Participant's Investment Fund and Participant' Risk Fund, Calculation of Risk Contribution in Family Takaful, Calculating the Gross Contribution 4.5) Financial aspects of takaful – Capital for takaful operations, basics of pricing, sources of surplus and surplus distribution, Risk-based capital, Taxation and Zakat</p>	

Assessment Breakdown	%
Continuous Assessment	30.00%
Final Assessment	70.00%

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
	Test	Test 1	10%	CLO1
	Test	Test 2	10%	CLO2

Reading List	Recommended Text
	<ul style="list-style-type: none"> • Albert Easton, Timothy Harris 2017, <i>Actuarial Aspects of Individual Life Insurance and Annuity Contracts</i>, ACTEX Publication USA • Syed Othman Alhabshi, Kamaruddin Sharif, Shaikh Hamzah Abdul Razak, Ezamshah Ismail 2012, <i>Takaful Realities & Challenges</i>, INCEIF Kuala Lumpur • S. David Promislow 2014, <i>Fundamentals of Actuarial Mathematics</i>, John Wiley & Sons [ISBN: 9781118782460] • 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] • Adnan Malik, Karim Ullah 2019, <i>Introduction to Takaful</i>, Palgrave Pivot [ISBN: 9789813290150] • Mohd Ma'Sum Billah, Ezzedine Ghlamallah, Christos Alexakis, <i>Encyclopedia of Islamic Insurance, Takaful and Retakaful</i>, Edward Elgar Publishing [ISBN: 9781788115834]
Reference Book Resources	<ul style="list-style-type: none"> • Louis J. Lombardi 2006, <i>Valuation of Life Insurance Liabilities</i>, ACTEX Publications [ISBN: 1566985609] • Carolina Orozco Garcia 2018, <i>Essays on the pricing of Life Insurance Portfolios with Embedded Options and the Merits of Pooling Claims</i>, University St. Gallen • Mishra M.N. & Mishra S.B. 2016, <i>Insurance Principles and Practice, 22nd Edition</i>, S. Chand Publishing [ISBN: 9789385676079]

Article/Paper List	This Course does not have any article/paper resources
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Other References	<ul style="list-style-type: none"> • Book D. Atkinson, J. Dallas 2000, <i>Life Insurance Products and Finance</i>, ACTEX Publication, USA • Book Menge W.O., Fischer C.H. 1965, <i>The Mathematics of Life Insurance - A Practical Guide to the Application of Insurance Principles</i>, Ulrich's Books Inc. • Website Bank Negara Malaysia 1996, <i>Bank Negara Act 1996</i>, Bank Negara Malaysia, Kuala Lumpur http://www.bnm.gov.my
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