UNIVERSITI TEKNOLOGI MARA
ASC305: INTRODUCTION TO ACTUARIAL MATHEMATICS

Course Name (English)	INTRODUCTION TO ACTUARIAL MATHEMATICS `APPROVED`
Course Code	ASC305

MQF Credit	4

Course Description	This course introduces the students to the real actuarial working environment. The syllabus for this course provides a basic understanding of actuarial mathematics including understanding basic knowledge and applying that knowledge purposely for life insurance premiums calculations.

Transferable Skills	Student being able to understand the basic knowledge and applying that knowledge purposely for life insurance premiums calculations.

Teaching Methodologies	Lectures

CLO		
	CLO1	Explain the basic theory of actuarial mathematics in life insurance.
	CLO2	Evaluate the calculation of premium and reserves in life insurance
	CLO3	Practice the application of actuarial mathematics in life insurance business.

Pre-Requisite Courses	No course recommendations

Topics
1. Life Tables 1.1) Mortality Tables and Their Construction 1.2) Expectation of Life 1.3) Select and Ultimate Mortality
2. Annuities 2.1) Net Single Premiums of Whole Life Annuity, Temporary and Deferred Life Annuities 2.2) Varying Annuities 2.3) Annuities Payable More Than Once A Year
3. Net Premiums 3.1) Annual premiums for whole life, term, endowment and deffered insurance 3.2) Increasing insurance 3.3) Accumulated cost of insurance 3.4) Return of premium policy
4. Net Level Reserves 4.1) Prospective and Retrospective Reserve 4.2) Net Amount at Risk 4.3) Mean Reserve 4.4) Nonforfeiture Values and Options
5. Modified Reserves Systems 5.1) Modified Net Premiums and Reserves 5.2) Full Preliminary Term Method
6. Gross Premiums 6.1) Distribution of Surplus 6.2) Mortality, Interest and Expenses Factors 6.3) Nonparticipating Gross Premiums 6.4) Asset Shares

Assessment Breakdown	%
Continuous Assessment	40.00%
Final Assessment	60.00%

Details of Continuous Assessment	Assessment Type	Assessment Description	% of Total Mark	CLO
	Assignment	Gross premium and reserves calculation on insurance product - CLO3 - 10%	10%	CLO3
	Quiz	Quiz 1 - CLO1 - 5%	5%	CLO1
	Quiz	Quiz 2 - CLO1 - 5%	5%	CLO1
	Test	Test 1 - CLO2 - 10%	10%	CLO2
	Test	Test 2 - CLO2 - 10%	10%	CLO2

Reading List	Recommended Text	**S. David Promislow 2015, *Fundamentals of Actuarial Mathematics*, John Wiley & Sons [ISBN: 9781118782460]**
	Reference Book Resources	**David C. M. Dickson,Mary R. Hardy, Howard R. Waters 2019, *Actuarial Mathematics for Life Contingent Risks*, Cambridge: Cambridge University Press [ISBN: 9781108478083]**
		Spurgeon, E. F. 2018, *Life contingencies (Classic reprint)*, Fb&c Limited [ISBN: 9780484350037]
		MacDonald, A. S., Richards, S. J., & Currie, I. D. 2018, *Modelling mortality with actuarial applications*, Cambridge: Cambridge University Press [ISBN: 9781107045415]
		Annamaria Olivieri,Ermanno Pitacco 2015, *Introduction to Insurance Mathematics*, Springer [ISBN: 3319213776]
		Arjun K. Gupta,Tamas Varga 2014, *An Introduction to Actuarial Mathematics*, Springer Science & Business Media [ISBN: 9789401707114]
		Menge, W.O. & Fischer D.H. 1975, *The Mathematics of Life Insurance*, Ulrich Books Inc. Michigan
Article/Paper List	This Course does not have any article/paper resources	
Other References	This Course does not have any other resources	