BACHELOR OF SCIENCE (ACTUARIAL AND FINANCIAL MATHEMATICS) SESSION 2015/2016 145 CREDITS			
1. UNIVERSITY COURSES (22 CREDITS)			
COURSE CODE	**COURSE NAME**	**PRE-REQUISITE**	**CREDITS**
GLT	Communication in English	-	6
GKN/GKR/GKV	Co-curriculum	-	2
GIG1001	Islamic and Asian Civilization (TITAS)	-	2
GIG1002/ GIG1006	Ethnic Relations/ Introduction to Malaysia	-	2
GIG1003	Basic Entrepreneurship Culture	-	2
GIG1004	Information Literacy	-	2
GIG1005	Social Engagement	-	2
GIX	External Faculty Electives Course	-	4
2. CORE COURSES (83 CREDITS)			
(1) FACULTY CORE COURSES (8 CREDITS)			
COURSE CODE	**COURSE NAME**	**PRE-REQUISITE**	**CREDITS**
SIX1001	Introduction to Science & Technology Studies	-	3
SIX1002	Ethics and Safety	-	2
SIX1004	Statistics	-	3
(2) PROGRAM CORE COURSES (75 CREDITS)			
COURSE CODE	**COURSE NAME**	**PRE-REQUISITE**	**CREDITS**
LEVEL 1 (17 Credits)			
SIM1001	Basic Mathematics	-	4
SIM1002	Calculus I	-	4
SIM1003	Calculus II	SIM1002	4
SIN1002	Introduction to Worksheet	-	2
SIQ1001	Introduction to Accounting	-	3
LEVEL 2 (26 Credits)			
SIM2001	Advanced Calculus	SIM1003	4
SIN2002	Structured Programming	SIM1002	4
SIT1001	Probability and Statistics I	SIM1002	4
SIT2001	Probability and Statistics II	SIT1001	4
SIQ2001	Microeconomics	-	3
SIQ2002	Macroeconomics	-	3
SIQ2003	Financial Mathematics and Derivatives	SIM1002	4
LEVEL 3 (16 Credits)			
SIQ3001	Actuarial Mathematics I	SIQ2003	4
SIQ3002	Portfolio Theory and Asset Models	SIQ2003	4
SIQ3003	Actuarial Mathematics II	SIQ3001	4
SIQ3004	Mathematics of Financial Derivatives	SIQ2003	4
LEVEL 4 (16 Credits)			
SIQ3005	Life Insurance and Takaful	SIT2001	4
SIQ3006	Risk Theory	SIT2001 and SIQ2003	4
SIQ3007	Industrial Training	-	8
3. ELECTIVE COURSES (40 CREDITS))			
(1) FACULTY ELECTIVE COURSES (9 CREDITS) [EF] * Courses Offered by Other Institute/Department within the Faculty of Science * Refer to the Faculty Elective Courses lists other than from the Institute of Mathematical Sciences but within the Faculty of Science			
(2) PROGRAM ELECTIVE COURSES (at least 31 CREDITS) [EJ]			
SIN1003	Mathematical Methods I	SIM1002	4
SIM2002	Linear Algebra	SIM1001	4
SIN2001	Mathematical Methods II	SIN1003	4
SIN2003	Basic Operational Research	SIM1001 and SIN1002	4
SIT2002	Further Mathematical Statistics	SIT2001	4
SIT2003	Stochastic Processes	SIT2001	4
SIT2004	Regression Analysis	SIT1001	4
SIN3015	Mathematical Science Project	SIM2002	4
SIT3003	Computer Intensive Methods in Statistics	SIT2001	4
SIT3004	Applied Stochastic Processes	SIT2003	4
SIT3005	Time Series and Forecasting Methods	SIT2001	4
SIT3006	Further Topics in Regression Analysis	SIT2001 and SIT2004	4
SIQ3008	Foundation of Islamic Finance	SIN2002	4

SIQ3009	Pension Mathematics	SIQ3001	4
SIQ3010	Survival Model	SIT2001	4

1. The exact number of courses offered (as shown above) for any particular year may vary depending on the availability of manpower.
2. Core courses under Bachelor of Science (Mathematics), Bachelor of Science (Computational and Industrial Mathematics) and Bachelor of Science (Statistics) may also be taken by a student in Bachelor of Science (Actuarial and Financial Mathematics) as Program Elective Courses. Please refer to the relevant programs.
3. Students must complete at least 110 credits prior to be allowed to undergo industrial training (SIQ3007).
4. Students are also encouraged to take CIX2001 (Financial Management) and CIC2001 (Basic Corporate Finance) as Program Elective Courses.

Attention:
Courses with codes SIQ**** except SIQ2003 are exclusive for students in Bachelor of Science (Actuarial and Financial Mathematics).

PROGRAM GOAL

To produce graduates with sound knowledge in the actuarial field through exploration in the theoretical and application of mathematics, statistics, economy and finance, able to think critically in problem solving as well as capable to increase competitiveness in the national and international level.

PROGRAM EDUCATIONAL OBJECTIVES

1. To prepare the students with theoretical and practical aspects as well as special skills in the actuarial field. (PO1, 2, 6)
2. To build actuarial ethics and professionalism required by the students in research and employment through effective communication. (PO3, 4, 5)
3. To train the students to work independently as well as in a team to organise knowledge and practical skills as enhancement of competitiveness. (PO1, 2, 7, 8)

PROGRAM LEARNING OUTCOMES

At the end of the program, graduates with B.Sc. (Actuarial and Financial Mathematics) are able to:

1. Explain the principles and concepts of actuarial science, finance, statistics and mathematics.
2. Apply actuarial science, finance, statistics and mathematics concepts to solve real-world problems.
3. Conduct professional activities with good social skills and demonstrate a sense of responsibility.
4. Practice characteristics associated with professionalism and ethical responsibility in analyzing real life phenomena.
5. Communicate using critical thinking with effective, accurate and relevant concepts, and exhibit team work and leadership skills.
6. Convert problems into actuarial, financial, statistical and mathematical models, and develop scientific strategies to obtain solutions.
7. Engage in life-long learning to advance knowledge and applications of actuarial science, finance, statistics and mathematics.
8. Apply managerial and entrepreneurial skills to manage resources needed to complete a task.

LIST OF COURSES ACCORDING TO SEMESTER
(PLANNING OF COURSES)

COMPONENT		YEAR 1				TOTAL CREDIT
		SEMESTER 1		SEMESTER 2		
		COURSE	CREDIT	COURSE	CREDIT	
University Courses		GLT Communication in English	3	GLT Communication in English	3	**14**
		GIG1003 Basic Entrepreneurship Culture	2	GIG1001 TITAS	2	
				GIG1002 Ethnic Relations	2	
				GIG1004 Information Literacy	2	
Program Core Courses	Faculty Core Courses	SIX1001 Introduction to Science & Technology Studies	3	SIX1004 Statistics	3	**8**
		SIX1002 Ethics and Safety	2			
	Departmental Core Courses	SIM1001 Basic Mathematics	4	SIM1003 Calculus II	4	**17**
		SIM1002 Calculus I	4	SIN1002 Introduction to Worksheet	2	
				SIQ1001 Introduction to Accounting	3	
	Departmental Elective Courses					
Faculty Elective Courses						
TOTAL CREDIT			**18**		**21**	**39**

COMPONENT		YEAR 2				TOTAL CREDIT
		SEMESTER 3		SEMESTER 4		
		COURSE	CREDIT	COURSE	CREDIT	
University Courses		GKN/GKR/GKV Co-curriculum	2	GIG1005 Social Engagement	2	**8**
		GIX External Faculty Electives Courses	2	GIX External Faculty Electives Courses	2	
Program Core Courses	Faculty Core Courses					
	Departmental Core Courses	SIM2001 Advanced Calculus	4	SIN2002 Structured Programming	4	**26**
		SIQ2001 Microeconomics	3	SIQ2002 Macroeconomics	3	
		SIQ2003 Financial Mathematics and Derivatives	4	SIT2001 Probability & Statistics II	4	
		SIT1001 Probability & Statistics I	4			
	Departmental Elective Courses			CIX2001 Financial Management	3	**3**
Faculty Elective Courses				Courses outside of Institute	3	**3**
TOTAL CREDIT			**19**		**21**	**40**

COMPONENT		YEAR 3				TOTAL CREDIT
		SEMESTER 5		SEMESTER 6		
		COURSE	CREDIT	COURSE	CREDIT	
University Courses						
Program Core Courses	Faculty Core Courses					
	Departmental Core Courses	SIQ3001 Actuarial Mathematics I	4	SIQ3003 Actuarial Mathematics II	4	**16**
		SIQ3002 Portfolio Theory and Asset Models	4	SIQ3004 Mathematics of Financial Derivatives	4	
	Departmental Elective Courses	SIM/SIN/SIT2/3***	4	SIM/SIN/SIT2/3***	4	**16**
		CIC2001 Basic Corporate Finance	4	SIM/SIN/SIT2/3***	4	
Faculty Elective Courses		Courses outside of Institute	3	Courses outside of Institute	3	**6**
TOTAL CREDIT			**19**		**19**	**38**

COMPONENT		YEAR 4				TOTAL CREDIT
		SEMESTER 7		SEMESTER 8		
		COURSE	CREDIT	COURSE	CREDIT	
University Courses						
Program Core Courses	Faculty Core Courses					
	Departmental Core Courses	SIQ3005 Life Insurance and Takaful	4	SIQ3007 Industrial Training	8	**16**
		SIQ3006 Risk Theory	4			
	Departmental Elective Courses	SIM/SIN/SIQ/SIT3***	4			**12**
		SIM/SIN/SIQ/SIT3***	4			
		SIM/SIN/SIQ/SIT3***	4			
Faculty Elective Courses						
TOTAL CREDIT			**20**		**8**	**28**