

SUMMARY OF INFORMATION ON EACH COURSE

1.	Name of Course	Introduction to Probability and Statistics							
2.	Course Code	PSM0325							
3.	Status of Course [Applies to (cohort)]	Core							
4.	MQF Level/Stage Note : Certificate – MQF Level 3 Diploma – MQF Level 4 Bachelor – MQF Level 6 Masters – MQF Level 7 Doctoral – MQF Level 8	Foundation							
5.	Version (State the date of the Senate approval – history of previous and current approval date)	Date of previous version : July 2014 Date of current version: June 2015							
6.	Pre-Requisite	Nil							
7.	Name(s) of academic/teaching staff	Heng Chai Yen, Mohd Daud Hassan							
8.	Semester and Year offered	Trimester 3							
9.	Objective of the course in the programme : To expose students to the basic topics in probability and statistics								
10.	Justification for including the course in the programme : To equip students with the basic concepts in probability and statistics								
11.	Course Learning Outcomes :		Domain			Level			
	LO1 Analyse the data		Cognitive			Level 4			
	LO2 Calculate the probability of various problems and distributions		Cognitive			Level 3			
	LO3 Calculate the summary measures		Cognitive			Level 3			
	LO4 Interpret the population mean		Cognitive			Level 2			
12.	Mapping of Learning Outcomes to Programme Outcomes :								
	Learning Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
	LO1	X	X				X		
	LO2	X	X				X		
	LO3	X	X				X		
	LO4	X	X				X		
13.	Assessment Methods and Types :								
	Method and Type		Description/Details				Percentage		
	Quiz		Written quizzes				20%		
	Test		Written tests				30%		
	Final Examination		Written examination				50%		

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14.	Mapping of assessment components to learning outcomes (LOs)				
	Assessment Components	LO1	LO2	LO3	LO4
	Quiz	20	20	20	28.57
	Test	30	30	30	
	Final Exam	50	50	50	71.43
15.	Details of Course				
	Topics	Mode of Delivery (eg : Lecture, Tutorial, Workshop, Seminar, etc.) Indicate allocation of SLT (lecture, tutorial, lab) for each subtopic			
		Lecture	Tutorial		
	Descriptive Statistics Basic terms, types of statistics, population, sample, types of variables; Tabular presentation: Frequency, relative frequency, percentage and cumulative frequency distributions; Pictorial presentation: Bar chart, pie chart, histogram, frequency polygon and ogive; Measures of central tendency for ungrouped and grouped data; Measures of dispersion for ungrouped and grouped data.	6	2		
	Events and Probability Experiment and sample space, events and their occurrences; Multiplication rule, combinations, permutations; Set operations, venn diagram, tree diagram; Probability of an event, additive and multiplicative rules; Conditional probability; Independent events, mutually exclusive events, complement event.	4	2		
Random variables Probability distributions of discrete random variable and continuous random variables; Cumulative distributions of discrete random variable and continuous random variables; Mean, variance, and standard deviation of discrete random variable and continuous random variables.	4	2			

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	Special Probability distributions Discrete: Binomial and Poisson distributions; Probability formula, probability table, mean, variance, and standard deviation of Binomial and Poisson distributions; Continuous: Normal distribution, standard normal distributions, probability table; Applications to real problems.	6	3		
	Sampling Distributions Mean, variance, and standard deviation of the sample mean, probability of the sample mean; Sampling error and non-sampling error; Sampling distributions of a sample mean when the population has a normal distribution; Sampling distributions of a sample mean when the population is not a normal distribution (Central Limit Theorem).	2	1		
	Estimation Point estimation for population mean; Margin of error; Interval estimation for a population mean when the population has a normal distribution for a large sample; Interval estimation of a population mean when the population is not a normal distribution (Central Limit Theorem)	2	1		
	Hypotheses Testing Null hypothesis, alternative hypotheses, significance level, critical value, rejection region, acceptance region, test statistics, critical-value method; Hypotheses testing for a population mean for a large sample.	4	2		
	Total	28	13		
16.	Total Student Learning Time (SLT)	Face to Face / Guided Learning		Independent Learning	
	Lecture	28		28	
	Tutorials	13		13	
	Tests	2		6	
	Quizzes	5		5	
	Final Exam	2		18	
	Sub Total	50		70	
	Total SLT	120			
17.	Credit Value	3			

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18.	Reading Materials :																																										
	Textbooks																																										
	Assliza, et al. (2011). <i>Introduction probability and statistics</i> . Pearson.																																										
	Reference Material (including 'Statutes' for Law)																																										
	Devore, J.L. (2012). <i>Probability and statistics for engineering and the sciences</i> (8th ed.). Boston: Brooks/Cole																																										
	Triola, M.F. (2014). <i>Elementary statistics</i> (12th ed.). Boston: Pearson Education, Inc.																																										
	Weiss, N.A. (2012). <i>Introductory Statistics</i> (9th ed.). Boston: Pearson Education, Inc.																																										
	Bluman, A.G. (2012). <i>Elementary Statistics: A Step by Step Approach</i> (8th ed.). New York: McGraw-Hill.																																										
	Appendix (to be compiled when submitting the complete syllabus for the programme) :																																										
	<ol style="list-style-type: none"> 1. Mission and Vision of the University and Faculty 2. Programme Objectives or Programme Educational Objectives 3. Programme Outcomes (POs) 4. Mapping of POs to the 8 MQF domain 5. Summary of the Bloom's Taxonomy's Domain Coverage in all the Los in the format below : 																																										
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2" style="width: 15%;">Subject</th> <th rowspan="2" style="width: 25%;">Learning Outcomes (please state the learning Outcomes)</th> <th colspan="3" style="width: 55%;">Bloom's Taxonomy Domain</th> </tr> <tr> <th style="width: 18%;">Affective</th> <th style="width: 18%;">Cognitive</th> <th style="width: 19%;">Psychomotor</th> </tr> </thead> <tbody> <tr> <td rowspan="4" style="text-align: center; vertical-align: middle;">ABC1234</td> <td>Learning Outcome 1</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Learning Outcome 2</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Learning Outcome 3</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Learning Outcome 4</td> <td></td> <td></td> <td></td> </tr> <tr> <td rowspan="4" style="text-align: center; vertical-align: middle;">DEF5678</td> <td>Learning Outcome 1</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Learning Outcome 2</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Learning Outcome 3</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Learning Outcome 4</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Subject	Learning Outcomes (please state the learning Outcomes)	Bloom's Taxonomy Domain			Affective	Cognitive	Psychomotor	ABC1234	Learning Outcome 1				Learning Outcome 2				Learning Outcome 3				Learning Outcome 4				DEF5678	Learning Outcome 1				Learning Outcome 2				Learning Outcome 3				Learning Outcome 4			
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