

1.	<b>Name of Subject :</b> Introduction To Probability and Statistics						
2.	<b>Subject Code:</b> PPS0025						
3.	<b>Status of Subject:</b> Core						
4.	<b>Stage:</b> Foundation						
5.	<b>Version:</b> Date of Previous Version:- July 2010 Date of Current Version – December 2010						
6.	<b>Name (s) of academic staff :</b> Assliza Salim, Ng Lik Neo, Noradzilah Ismail, Heng Chai Yen, Tay Cheng Lan, Goh Wei Wei, Nazihah Ahmad ,Norazliana Aridi, Juliza Mohd Johar						
7.	<b>Rationale for the inclusion of the course/module in the programme :</b> To provide students with sound understanding of the basic concepts in probability and statistics in preparation for the degree courses.						
8.	<b>Semester and Year offered :</b> Trimester 3						
9.	<b>Total Student Learning Time (SLT)</b>	<b>Face to Face</b>				<b>Total Guided and Independent Learning</b>	
	L = Lecture T = Tutorial P = Practical O = Others (Mid Term + Final)	L 28	T 14	P 0	O 3.5	Guided = 45.5 Independent = 75 Total = 120.5	
10.	<b>Credit Value:</b> 3 (120.5/40 = 3.01)						
11.	<b>Prerequisite (if any) :</b> NIL						
12.	<b>Learning outcomes :</b> i. Illustrate and analyze the data (Cognitive, Level 2) ii. Calculate the probability of various problems and distributions (Cognitive, Level 3) iii. Evaluate the summary measures (Cognitive, Level 3) iv. Interpret and conclude for population mean (Cognitive, Level 3)						
13.	<b>Synopsis:</b> This course introduces basic introduction on probability and statistics to students. For probability, students are taught with all the basic concepts of probability including events and probability, mutually exclusive events, independent events and conditional probability, discrete and continuous random variables, probability density function, and so on, including discrete and continuous distributions. For statistics, students will be introduced with some of the basic terms and learned about how to organize, measure and represent the grouped and ungrouped data, sampling distribution, estimation and hypotheses testing.						
14.	<b>Mode of Delivery :</b> Lecture and tutorial						
15.	<b>Assessment Methods and Types :</b> i. Quiz 10% ii. Assignment 20% iii. Midterm test 20% iv. Final Exam 50% <b>Total 100%</b>						
16.	<b>Mapping of the course/module to the Programme Learning Outcomes :</b>					<b>% of contribution</b>	
	To acquire basic knowledge and fundamental principles of computer technology and sciences for IT students.					100	
17.	<b>Content outline of the course/module and the SLT per topic :</b>						
	<b>TOPIC</b>	<b>Content Outline</b>			<b>SLT</b>		
					Lecture	Tutorial	Self-study
	<b>1</b>	<b>Descriptive Statistics</b>			5	3	7
		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.			
<b>2</b>	<b>Events and Probability</b> 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.	6	3	9
<b>3</b>	<b>Random variables</b> 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.	5	2	7
<b>4</b>	<b>Special Probability distributions</b> 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.	5	2	8
<b>5</b>	<b>Sampling Distributions</b> 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	5
<b>6</b>	<b>Estimation</b> 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	3
<b>7</b>	<b>Hypotheses Testing</b> 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.	3	2	3
	<b>Quizzes</b>	-	-	2
	<b>Assignment</b>	-	-	7
	<b>Midterm</b>	1.5	-	4
	<b>Final</b>	2	-	20
	<b>TOTAL</b>	<b>31.5</b>	<b>14</b>	<b>75</b>

18.	<b>Teaching and Learning Activities/Total Student Learning Time (SLT):</b>		
		<b>Face to Face</b>	<b>Self Learning</b>
	<b>Lecture</b>	28	28
	<b>Tutorial</b>	14	14
	<b>Quiz (3)</b>		2
	<b>Assignment (2)</b>		7
	<b>Midterm Test (1)</b>	1.5	4
	<b>Final</b>	2	20
	<b>Sub-total</b>	<b>45.5</b>	<b>75</b>
	<b>Total SLT(hours)</b>		<b>120.5</b>
19.	<p><b>Main references supporting the course :</b>  Tan, C.K., Tan, C.P., Mislina, A., Assliza, S., Lye, C. T., Law, C. Y., &amp; Chong, F. S. (2005). <i>Elementary Probability and Statistics</i>. Prentice Hall</p> <p><b>Additional references supporting the course :</b></p> <p>Dekking, M. (2005). <i>A modern introduction to probability and statistics: understanding why and how</i>. Springer.</p> <p>Devore, J. L. (2009). <i>Probability and statistics for engineering and the sciences</i>. Thomson/Brooks/Cole.</p> <p>Prem, S. M. (2004). <i>Introductory Statistics</i>. 5<sup>th</sup> Ed. John Wiley &amp; Sons.</p> <p>Rosenkrantz, W. A. (2009). <i>Introduction to probability and statistics for science, engineering, and finance</i>. CRC Press</p> <p>Soong, T. T. (2004). <i>Fundamentals of probability and statistics for engineers</i>. John Wiley &amp; Sons.</p> <p>Triola, M. F. (2008). <i>Elementary statistics with multimedia study guide</i>. 10<sup>th</sup> Ed. Pearson.</p> <p>Walpole, R. E., &amp; Myers, R. L. (2007). <i>Probability &amp; Statistics for Engineers &amp; Scientists</i>. 8<sup>th</sup> Ed. Pearson Education.</p> <p>Weiss, N. A. (2008). <i>Introductory Statistics</i>. 8<sup>th</sup> Ed. Pearson/Addison Wesley.</p>		

No	Subject Learning Outcomes (SLO)	Type of Assessment	Topic/Contents (from syllabus document)
1	To describe data numerically and graphically	Quiz	1, 2
		Assignment	1,2
		Test	1,2
2	To explain the methods used to calculate probability of various problems and distributions	Quiz	3, 4, 5, 6
		Assignment	3, 4, 5, 6
		Test	3
		Final exam	3, 4, 5, 6
3	To estimate population parameters using sample statistics	Quiz	4, 5, 6
		Assignment	4, 5, 6
		Final Exam	4, 5, 6
4	To discuss the steps in hypothesis testing	Quiz	6
		Assignment	6
		Final Exam	6