Subject Description Form

Subject Code	AMA10071							
Subject Title	Calculus and Linear Algebra							
Credit Value	3							
Level	1							
Pre-requisite/ Co-requisite/ Exclusion	Nil							
Objectives	This subject is to provide students with the basic skills of calculus, and to introduce the ideas and techniques of basic linear algebra and its applications.							
Intended Learning Outcomes	 Upon completion of the subject, students will be able to: a. apply mathematical reasoning to solve problems in their discipline b. make use of the knowledge of mathematical techniques and adapt known solutions to various situations c. apply mathematical modeling in problem solving in applied sciences d. develop and extrapolate mathematical concepts in solving new problems e. undertake continuous learning 							
Subject Synopsis/ Indicative Syllabus	Review of basic algebra and trigonometry; Limit and continuity; Derivatives; Mean Value Theorem; Logarithmic and exponential functions; Maxima and Minima; Curve sketching; Definite and indefinite integrals; Methods of integration; Fundamental Theorem of Calculus; Applications. Matrices, Determinant and systems of linear equations.							
Teaching/Learning Methodology	By lectures, tutorials and exercises							
Assessment Methods in Alignment with Intended Learning Outcomes	Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed (Please tick as appropriate)abcde					
	1. Tests/assignments	40%	~	✓	~	~	✓	
	2. Examination	60%	~	✓	~	~	~	
	Total	100 %			I	1		
	To pass this subject, students are required to obtain Grade D or above in <u>both</u> the Continuous Assessment and Examination components.							
	By learning how to solve a collection of theoretical and practical mathematical problems designed and distributed in assignments, tests and examination, the students will master the basic techniques in calculus and linear algebra, and will be							

	able to apply the techniques to model and solve simple practical problems in their discipline.				
Student Study Effort Expected	Class contact:				
Lapecteu	Lecture	26 Hrs.			
	Tutorial	13 Hrs.			
	Other student study effort:				
	 Self-study 	66 Hrs.			
	Total student study effort	105 Hrs.			
Reading List and References	K.F. Hung, Wilson C.K. Kwan and Glory T.Y. Pong (2013) Foundation Mathematics & Statistics. McGraw Hill Chan, C.K., Chan, C.W. & Hung, K.F. (2013) Basic Engineering Mathematics. McGraw Hill				
	Thomas, G.B., Finney, R.L., Weir, M.D. & Giordano, F.R. (2009) Thomas' Calculus. 12th ed. Addison Wesley				