Subject Description Form

Subject Code	AMA1191
Subject Title	Mathematics
Credit Value	3
Level	1
Pre-requisite / Co-requisite/ Exclusion	Nil
Objectives	The subject aims to introduce students to some basic skills of higher mathematics. The emphasis will be on application of mathematical methods to solving practical problems.
Intended Learning Outcomes	Upon completion of the subject, students will be able to: 1. apply mathematical reasoning to analyse essential features of different problems; 2. extend their knowledge of mathematical techniques and adapt known solutions to different situations.
Subject Synopsis/ Indicative Syllabus	*Foundation Mathematics* *Basic algebra:* Mathematical induction; Binomial Theorem; inequalities. *Functions and their inverses:* Polynomials, Remainder heorem; rational functions, partial fractions; exponential and logarithmic functions; trigonometric functions. *Complex numbers:* Basic operations; polar form; De Moivre's Theorem. *Linear Algebra* Matrices and systems of linear equations, elementary row operations, nonsingular matrices, determinants.
Teaching/Learning Methodology	The subject will be delivered mainly through lectures and tutorials. The lectures aim to provide students with an integrated knowledge required for the understanding and application of mathematical concepts and techniques. Tutorials will mainly be used to develop students' problem solving ability, logical thinking and effective communication.

Assessment Methods in Alignment with Intended Learning Outcomes

Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed (Please tick as appropriate)	
		1	2
a. Continuous Assessment	40%	✓	✓
b. Examination	60%	✓	✓
Total	100 %		

Continuous Assessment comprises of assignments and a mid-term test. A final examination is held at the end of the semester.

Questions used in assignments, mid-term test and examination are used to assess the student's level of understanding of the basic concepts and their ability to use mathematical techniques in solving problems in science and engineering.

To pass this subject, students are required to obtain Grade D or above in **both** the Continuous Assessment and the Examination components.

Student Study Effort Required

Class contact:	
▪ Lecture	28 Hrs.
▪ Tutorial	14 Hrs.
Other student study effort:	
▪ Assignments	16 Hrs.
▪ Self-study	42 Hrs.
Total student study effort	100 Hrs.

Reading List and References

Textbook:

Stewart J., Redlin L. & Watson S.	Precalculus: Mathematics for Calculus 5th edition	Thomson Benjamin Cummings 2006

References:

K.F. Hung, Wilson C.K. Kwan and Glory T.Y. Pong	Foundation Mathematics & Statistics	McGraw Hill 2011