MULTIMEDIA UNIVERSITY®

COURSE INFORMATION

1 .	**Name of Course**	Mathematical Techniques 2
2 .	**Course Code**	DIM5068
3 .	**Type of Course** **(e.g. : Core, major, elective etc.)**	Core/Major Diploma in Information Technology
4 .	**Synopsis**	This subject will disclose students to environment of essential mathematics concepts. Students will have the ability of practising the concepts in formulating and problem solving in ICT related area.
5 .	**Version** **(State the date of theSenate's approval - previous and the current approval date)**	Current: Oct 2017 Previous: March 2015
6 .	**Name(s) of Academic Staff**	**Farah Izzati Yussoff, Tan Sin Yin**, Nurainiah Abu Hassan, Mar Syazana Maslin, Ikha Fadzila Md Idris, Suraya Suyod, Tan Chun Fui, Nabil Abas, Norizzati Salleh
7 .	**Semester and Year Offered**	Trimester 2, Year 1
8 .	**Credit Value**	4
9 .	**Pre-Requisite**	Mathematical Techniques 1
10 .	**Objective of the course in the programme:**	
	Tp provide essential mathematics background for students pursuing information technology courses.	
11 .	**Justification for including the course in the programme:**	
	This subject will expose students to environment of essential mathematics concepts. Students will have the ability of applying the concepts in formulating and problem solving in ICT related area.	
14 .	**Transferable Skills:**	
	Teamwork, communication skills and problem solving.	
15 .	**Distribution of Student Learning Time (SLT)**	

Course Content Outline	**CLO	Teaching and Learning Activities – Guided Learning (F2F)* *L	*T	*P	*O	Guided Learning (NF2F)*	Independent Learning (NF2F)*	Total SLT
1 Complex Numbers Complex numbers and their properties; Complex numbers as vectors; The complex plane; Complex algebra; Functions of a complex variable.	**1**	4	1				5	10
2 Limits Tangent and Velocity; Limit of a function; Continuity; Limits at infinity	**1**	2	1				3	6
3 Derivatives Derivatives; Differentiation formula; Chain Rule; Derivatives of Exponential and Logarithmic Functions; Implicit differentiation; Higher derivatives;	**1**	7	2				9	18
4 Application of Derivatives Rates of change; Maximum and minimum values; Curve sketching;	**1**	4	1				5	10
5 Integration Anti-Derivatives; Indefinite and Definite Integral; Integration by substitution; Integration by parts; Integration by partial fractions.	**1**	6	2				8	16
6 Application of Integration Area under the curve; Volume as an integral of areas.	**1**	5	1				6	12
7 Differential Equations Linear and non-linear equations, Degree and order; Initial-value problems; First order equations: Separable differential equations; Exact differential equation; Integrating factor; Higher-order equations: Second order linear Differential equations; Homogeneous equations with constant coefficients; Non-homogeneous equations.	**1 & 2**	9	3				12	24
8 Vectors Dots and cross products; Equations of a line and a plane; Linear combination of vectors.	**1**	5	2				7	14
							Total SLT	**110**

SUMMATIVE ASSESSMENT

1. Continuous Assessment	**Percentage %**	**Total SLT**
Quizzes	10%	6

	Assignments	20%	12	
	Tests	20%	12	
		Total SLT for Continuous Assessment	**30**	
	2. Final Assessment	**Percentage %**	**Total SLT**	
			F2F	**ILT**
	Final Exam	50%	2	18
		Total SLT for Final Assessment (F2F + NF2F)	**20**	
	Grand Total	**100%**	**160**	
	****Indicate the CLO based on the CLO's numbering in Item 12.** ***L= Lecture, *T= Tutorial, *P= Practical, *O= Others, F2F*= Face to Face, NF2F*= Non Face to Face**			
16 .	**Identify Special Requirement to Deliver the Course (e.g., software, nursery, computer lab, simulation room):** NA			
17 .	**Main References:** 1. Briggs, W.L., Cochran, L., & Gillet, B. (2013). *Calculus for scientists and engineers early transcendentals* . (1st ed.) Pearson.			
18 .	**Additional References:** 1. Stewart, J. (2012). Calculus (7th ed.). Thomson. 2. Haeussler, E.F., Paul, R.S., Wood, R.J. (2011). *Introductory mathematical analysis for business, economics, and the life and social sciences* (13th ed.). Pearson.			