MULTIMEDIA UNIVERSITY®

COURSE INFORMATION

1.	**Name of Course**	Mathematics III
2.	**Course Code**	PMT0301
3.	**Type of Course** **(e.g. : Core, major, elective etc.)**	Core
4.	**Synopsis**	The subject aims to introduce students to fundamental concepts of probability and statistics.
5.	**Version** **(State the date of theSenate's approval - previous and the current approval date)**	Current: January 2018 Previous: September 2015
6.	**Name(s) of Academic Staff**	Ng Sew Lai Yoong Yih Jian Foo Lee Kien Tong Gee Kok
7.	**Semester and Year Offered**	Trimester 3
8.	**Credit Value**	4
9.	**Pre-Requisite**	Mathematics I

10. **Objective of the course in the programme:**
To equip students with basic knowledge and principles of Mathematics for IT students.

11. **Justification for including the course in the programme:**
To provide students with a sound understanding of the basic mathematical concepts.

12. **Course Learning Outcomes (CLO)**

		Domain	Level
CLO1:	Solve problems related to vectors, matrices and systems of linear equations.	Cognitive	3
CLO2:	Solve problems related to sequences and series, and use of binomial theorem.	Cognitive	3
CLO3:	Recall the fundamental concepts of statistics.	Cognitive	1
CLO4:	Solve problems related to various events and various probability distributions.	Cognitive	3

13. **Mapping of the Course Learning Outcomes to the Programme Learning Outcomes, Teaching Methods and Assessment:**

Course Learning Outcomes (CLO) (Must tally with CLOs in item 12)	Programme Learning Outcomes (PLO)												Teaching Methods	Assessment Method
	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10	PLO11	PLO12		
CLO1	✓					✓							Lecture/ Tutorial	Quizzes/ Tests/ Final Exam
CLO2	✓					✓							Lecture/ Tutorial	Quizzes/ Tests/ Final Exam
CLO3	✓												Lecture/ Tutorial	Quizzes/ Tests/ Final Exam
CLO4	✓					✓							Lecture/ Tutorial	Quizzes/ Tests/ Final Exam
Total	**4**					**3**							*Indicate the relevancy between the CLO and PLO by ticking "✓" the appropriate relevant box (This description must be read together with standards 2.1.2, 2.2.1, and 2.2.2 in Area 2 – pages 16 & 18 of COPPA 2.0)*	

14. **Transferable Skills:**
Transferable Skill: Problem Solving
How it is developed: Discussion/ Practices of various application of basic mathematics in real world problems.
Assessment: Tutorial Exercises/ Quizzes/ Tests/ Final Exam

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	**Vectors** Vectors in 2 and 3 dimensions. Dot product. Unit vectors. Cross product. Equations of lines and planes.	**1**	5	1			3	4	13
2	**Matrices and Systems of Equations** Simultaneous equations of two variables. Solutions of systems of linear equations. Matrices and matrix operations. Determinants and inverses of matrices. Solving systems of linear equations (including using methods of Gaussian elimination and Gauss-Jordan elimination.)	**1**	5	4			3.5	5.5	18
3	**Sequences and Series** Introduction to summation notation. Arithmetic and geometric sequences. Binomial theorem.	**2**	5	3				5	13
4	**Descriptive Statistics** Introduction to basic terms in statistics. Graphical representation of data. Measures of central tendency and measures of dispersion for ungrouped and grouped data.	**3**	8	6				9	23
5	**Events and Probability** Sample space and events. Set operations, Venn diagram. Mutually exclusive events. Complement events. Counting Techniques: Permutation and Combination. Probability of an event. Conditional probability. Independent events.	**4**	9	6				9	24
6	**Probability Distributions** Binomial and Poisson distributions. Normal distribution. Applications of the probability distributions.	**4**	6	5			5	7	23
								Total SLT	**114**

SUMMATIVE ASSESSMENT

1. Continuous Assessment	Percentage %	Total SLT
Quizzes	20%	12

	Mid term Test	30%	12	
		Total SLT for Continuous Assessment	**24**	
	2. Final Assessment	**Percentage %**	**Total SLT**	
			F2F	**ILT**
	Final Exam	50%	2	20
		Total SLT for Final Assessment (F2F + NF2F)	**22**	
	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):**

17 . **Main References:**

18 . **Additional References:**

Stewart, J., Redlin, L., & Watson, S. (2012) Precalculus: Mathematics for Calculus (6th ed,). Brooks/Cole, Cengage Learning.
Assliza Salim. et al. (2011). Introduction to Probability and Statistics. Pearson. [ISBN: 789673491490]
Devore, J. L. (2012). Probability and statistics for engineering and the sciences. 8th Edition, Thomson/Brooks/Cole.
Walpole, R. E., & Myers, R. L. (2011). Probability & Statistics for Engineers & Scientists. 9th Ed. Pearson Education.

Note:

Cells shaded light grey contain formulas / fixed values. Edit these formulas only if needed.