

**COURSE INFORMATION**

1 .	<b>Name of Course</b>	Trigonometry	
2 .	<b>Course Code</b>	PTM0145	
3 .	<b>Type of Course</b> (e.g. : Core, major, elective etc.)	Core	
4 .	<b>Synopsis</b>	This course covers some of the basic topics in Trigonometry. Topics covered in trigonometry are trigonometric functions and their graphs, analytic trigonometry and also applications of trigonometry for triangles, polar coordinates and the complex plane. There will be topics covered like the Cartesian coordinate system, analytic geometry and matrices. The matrices provide a method to solve a system of linear equations. In conclusion, students will learn basic concepts in each topic and how to apply respective formulas, sketch some graphs, and also solve the different types of problems.	
5 .	<b>Version</b> (State the date of the Senate's approval - previous and the current approval date)	Current: August 2017 Previous: June 2015	
6 .	<b>Name(s) of Academic Staff</b>	Mohd Daud Hassan, Nurhayati Yusoff, Nor Aini Naim.	
7 .	<b>Semester and Year Offered</b>	Trimester 1	
8 .	<b>Credit Value</b>	3	
9 .	<b>Pre-Requisite</b>	None	
10 .	<b>Objective of the course in the programme:</b> To expose students to the basic topics in trigonometry and matrices.		
11 .	<b>Justification for including the course in the programme:</b> To equip students with the basic concepts of trigonometry and matrices.		
12 .	<b>Course Learning Outcomes (CLO)</b>	<b>Domain</b>	<b>Level</b>
	<b>CLO1:</b> Solve problems related to complex numbers.	Cognitive	3
	<b>CLO2:</b> Sketch the graph of straight lines and conic sections.	Cognitive	3
	<b>CLO3:</b> Solve problems related to trigonometric functions, triangles, polar coordinates and complex plane.	Cognitive	3
	<b>CLO4:</b> Use matrices to solve a system of linear equations.	Cognitive	3

13.	<b>Mapping of the Course Learning Outcomes to the Programme Learning Outcomes, Teaching Methods and Assessment:</b>														
	<b>Course Learning Outcomes (CLO) (Must tally with CLOs in item 12)</b>	<b>Programme Learning Outcomes (PLO)</b>											<b>Teaching Methods</b>	<b>Assessment Method</b>	
		P L O 1	P L O 2	P L O 3	P L O 4	P L O 5	P L O 6	P L O 7	P L O 8	P L O 9	P L O 10	P L O 11			P L O 12
	CLO1	✓	✓				✓							Lecture, Tutorial	Quiz, Test, Final Examination
	CLO2	✓	✓				✓							Lecture, Tutorial	Quiz, Test, Final Examination
	CLO3	✓	✓				✓							Lecture, Tutorial	Quiz, Test, Final Examination
	CLO4	✓	✓				✓							Lecture, Tutorial	Quiz, Final Examination
	<b>Total</b>	<b>4</b>	<b>4</b>				<b>4</b>								<i>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 &amp; 18 of COPPA 2.0)</i>
14.	<b>Transferable Skills:</b> Teamwork, Problem solving and Analytical skills														
15.	<b>Distribution of Student Learning Time (SLT)</b>														
	<b>Course Content Outline</b>	<b>**CLO</b>	<b>Teaching and Learning Activities</b>				<b>Guided Learning (NF2F)*</b>	<b>Independent Learning (NF2F)*</b>	<b>Total SLT</b>						
			<b>Guided Learning (F2F)*</b>												
			*L	*T	*P	*O									
1	<b>Trigonometry</b> Trigonometric functions: angles and their measure, trigonometric ratios for a general angle; Graphs of trigonometric functions, inverse trigonometric functions; Trigonometric identities and equations; Law of Sines and Cosines.	<b>CLO3</b>	12	6			2	20	40						
2	<b>Complex Numbers</b> Algebraic properties of complex numbers; Polar form of complex numbers; The complex plane and De Moivre's Theorem.	<b>CLO1</b>	4	2			0	6	12						
3	<b>Coordinate Geometry</b> Rectangular coordinates (in 2-D): equations and graphs of the straight lines, parallel and perpendicular lines; Distance and midpoint formulas; Circles; Conic sections; Polar coordinates.	<b>CLO2, CLO3</b>	5	3			1	9	18						
4	<b>Matrices</b> Matrix operations: addition, subtraction, scalar multiplication, matrix multiplication; Identity matrix; Transpose of a matrix; Determinant of a square matrix (2x2 and 3x3 matrix only); Cofactor matrix; Adjoint matrix; Inverse matrix; Solving systems of linear equations using the inverse matrix and Cramer's Rule.	<b>CLO4</b>	4	2			0	6	12						
	<b>Total SLT</b>								<b>82</b>						
<b>SUMMATIVE ASSESSMENT</b>															

1. Continuous Assessment		Percentage %	Total SLT	
Quizzes		20%	10	
Tests		30%	8	
<b>Total SLT for Continuous Assessment</b>			<b>18</b>	
2. Final Assessment		Percentage %	Total SLT	
Final Exam		50%	F2F 2	ILT 18
<b>Total SLT for Final Assessment (F2F + NF2F)</b>			<b>20</b>	
<b>Grand Total</b>		<b>100%</b>	<b>120</b>	
**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 .	<b>Identify Special Requirement to Deliver the Course (e.g., software, nursery, computer lab, simulation room):</b> None			
17 .	<b>Main References:</b> Sullivan, M., et al. (2011). Algebra & trigonometry. Prentice Hall.			
18 .	<b>Additional References:</b> TSullivan, M. (2012). Algebra & trigonometry (9th ed.). Boston: Pearson Education, Inc. Coburn, J.W. (2010). Algebra and trigonometry (2nd ed.). New York: McGraw-Hill. Dugopolski, M. (2011). College algebra & trigonometry: A unit circle approach (5th ed.). Boston: Pearson Education, Inc. Beecher, J.A., Penna, J.A. & Bittinger, M.L. (2012). Algebra and trigonometry (4th ed.). Boston: Pearson Education, Inc.			

**Note:**

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