

**COURSE INFORMATION**

1 .	<b>Name of Course</b>	Algebra	
2 .	<b>Course Code</b>	PAM0135	
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 Algebra. Topics covered in algebra are equations and inequalities, graphs, functions and types of functions and also sequences and series. There will be proving of some mathematical statements using Mathematical Induction, and expanding binomial term with power by using Binomial Theorem. 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 algebra .		
11 .	<b>Justification for including the course in the programme:</b> To equip students with the basic concepts of algebra.		
12 .	<b>Course Learning Outcomes (CLO)</b>	<b>Domain</b>	<b>Level</b>
	<b>CLO1:</b> Solve problems related to equations and inequalities using fundamental concepts of algebra.	Cognitive	Level 1
	<b>CLO2:</b> Sketch the graph of various functions.	Cognitive	Level 3
	<b>CLO3:</b> Use Mathematical Induction to prove mathematical statements and Binomial Theorem to expand a binomial raised to a power.	Cognitive	Level 3
	<b>CLO4:</b> Solve problems related to arithmetic and geometric progressions.	Cognitive	Level 4

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, Mid Term Test, Final Examination
	CLO2	✓	✓				✓							Lecture, Tutorial	Quiz, Mid Term Test, Final Examination
	CLO3	✓	✓				✓							Lecture, Tutorial	Quiz, 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									
	<b>1 Fundamentals of Algebra</b> Real numbers; Polynomials; Factoring polynomials; Rational expressions; Integer exponents; Rational exponents and Radicals.	<b>CLO1</b>	6	2			0	8	16						
	<b>2 Equations and Inequalities</b> Equations: Linear equations; Quadratic equations; Radical equations; Polynomial equations; Inequalities: Linear; Quadratic; Rational and polynomial inequalities; Equations and inequalities involving absolute value.	<b>CLO1</b>	6	3			1	10	20						
	<b>3 Functions and Algebraic Topics</b> Functions; Domain and Range; Graph of functions and transformations of functions; Types of functions and their graphs: Quadratic functions; Polynomial functions; Rational functions; Exponential functions; and logarithmic functions; Composite and inverse functions; Indices and logarithms; Dividing polynomials, Remainder theorem and Factor theorem.	<b>CLO2</b>	10	5			1	16	32						
	<b>4 Sequences and Series</b> Introduction to summation notation; Sequence and series; Arithmetic sequence and geometric sequence and series; Binomial theorem; Pascal's triangle; Mathematical induction.	<b>CLO3,CLO4</b>	3	3			1	7	14						
	<b>Total SLT</b>								<b>82</b>						
	<b>SUMMATIVE ASSESSMENT</b>														
	<b>1. Continuous Assessment</b>		<b>Percentage %</b>						<b>Total SLT</b>						

Quiz	20%	10	
Test	30%	8	
<b>Total SLT for Continuous Assessment</b>		<b>18</b>	
<b>2. Final Assessment</b>	<b>Percentage %</b>	<b>Total SLT</b>	
Final Exam	50%	<b>F2F</b>	<b>ILT</b>
		2	18
<b>Total SLT for Final Assessment (F2F + NF2F)</b>		<b>20</b>	
<b>Grand Total</b>	<b>100%</b>	<b>120</b>	
<b>**Indicate the CLO based on the CLO's numbering in Item 12.</b> <b>*L= Lecture, *T= Tutorial, *P= Practical, *O= Others, F2F*= Face to Face, NF2F*= Non Face to Face</b>			
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> Sullivan, 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.