



UNIVERSITI TEKNOLOGI MARA

MAE417: FUNDAMENTAL OF MATHEMATICS FOR PRIMARY SCHOOL TEACHERS

Course Name (English)	FUNDAMENTAL OF MATHEMATICS FOR PRIMARY SCHOOL TEACHERS APPROVED
Course Code	MAE417
MQF Credit	3
Course Description	This course is a study of fundamental mathematics principles and concepts. Its aim is to enhance students' knowledge and skills about the fundamentals of mathematics. The topics that will be discussed are set, indices, logarithm, surd, coordinate geometry, trigonometry, vector and complex numbers. The emphasis is on building conceptual understanding and on deepening content knowledge on mathematics learning.
Transferable Skills	-Demonstrate professional skills, knowledge and competencies. -Demonstrate ability to apply creative, imaginative and innovative thinking and ideas to problem solving. - Demonstrate ability to analyse issues/problems from multiple angles and make suggestions
Teaching Methodologies	Lectures, Blended Learning, Tutorial, Discussion
CLO	CLO1 Demonstrate factual knowledge including the mathematical notation and terminology used in this course. CLO2 Describe the fundamental principles including the laws and theorems arising from the concepts covered in this course. CLO3 Apply course material along with techniques and procedures covered in this course to solve problems.
Pre-Requisite Courses	No course recommendations
Topics	
1. Sets 1.1) Sets 1.2) Subsets, Universal Sets and Complement of a set 1.3) Operations on sets.	
2. Real Number System 2.1) Sets of numbers in the real number system 2.2) Representation of real numbers in number line 2.3) Basic Operations on Real Numbers 2.4) Properties of Real Numbers 2.5) Finite and infinite intervals	
3. Logarithms and surd 3.1) Indices and laws of indices 3.2) Concepts of surd 3.3) Logarithm and laws of logarithm 3.4) Changing the base of logarithm 3.5) Solving equations that involve indices and logarithm	

4. Coordinate Geometry

- 4.1) Distance between two points
- 4.2) Division of a line segment
- 4.3) Areas of polygons
- 4.4) Equations of straight line
- 4.5) Parallel lines and perpendicular lines

5. Circular Measure

- 5.1) Radians
- 5.2) Length of an arc of a circle
- 5.3) Area of a sector of a circle

6. Trigonometric Functions

- 6.1) Values of Sine, cosine and tangent of an angle
- 6.2) Positive and negative angles
- 6.3) Trigonometric Functions of any Angles
- 6.4) Trigonometric equations
- 6.5) Trigonometric basic identities

7. Vectors

- 7.1) Definition of vector and vector notation
- 7.2) Equality of two vectors
- 7.3) Multiplication of vector by a scalar
- 7.4) Parallel condition of two vectors
- 7.5) Addition and subtraction of vectors
- 7.6) Expression of a vector as the line combination of a few vectors

8. Complex Number

- 8.1) The complex numbers
- 8.2) Geometrical representation of complex numbers
- 8.3) Modulus and argument of a complex number

Assessment Breakdown	%
Continuous Assessment	60.00%
Final Assessment	40.00%

Details of Continuous Assessment	Assessment Type	Assessment Description	% of Total Mark	CLO
	Assignment	Tutorial	10%	CLO2 , CLO3
	Discussion	online discussion	10%	CLO2 , CLO3
	Test	test 1	20%	CLO1 , CLO2 , CLO3
	Test	Test 2	20%	CLO1 , CLO2 , CLO3

Reading List	Recommended Text
	<ul style="list-style-type: none"> • Abd Wahid Md Raji, Hamisan Rahmat, Ismail Kamis, Mohd Nor Mohamad & Ong Chee Tiong 2002, <i>Foundation Mathematics</i>, UTM • Abd Wahid Md Raji, Hamisan Rahmat, Ismail Kamis, Mohammed Mohd Talib, Mohd Nor Mohamad & Ong Chee Tiong 2002, <i>Advanced Mathematics</i>, UTM • Marzita Puteh 2001, <i>Matematik Asas Siri 1</i>, Prentice Hall Kuala Lumpur • Marzita Puteh 2001, <i>Matematik Asas Siri 2</i>, Prentice Hall Kuala Lumpur • A Shukor A Rahman 1996, <i>Matematik Matrikulasi</i>, 1 Ed., Fajar Bakti • A Shukor A Rahman 1997, <i>Matematik Matrikulasi</i>, 2 Ed., Fajar Bakti • McGregor & Collins 1994, <i>Fundamentals of University Mathematics</i>, Albion Publishing Chichester

Article/Paper List	This Course does not have any article/paper resources
Other References	This Course does not have any other resources