UNIVERSITI TEKNOLOGI MARA
MAE420: BASIC CALCULUS FOR PRIMARY SCHOOL TEACHERS

Course Name (English)	BASIC CALCULUS FOR PRIMARY SCHOOL TEACHERS `APPROVED`
Course Code	MAE420

MQF Credit	3

Course Description	This course is an introduction to the fundamentals of calculus with the prime focus on the introduction of derivative and integration concepts in calculus learning. Being an introductory course, it briefly discusses the history and the application of calculus in daily application. It reviews the fundamentals of functions, trigonometric, exponential, and logarithmic functions. The gist of this course will be the discussion of limits, derivatives, and applications of differential calculus to real-world problem areas. An overview of integration, basic techniques for integration and a variety of applications of integration, concludes the course.

Transferable Skills	skills in fundamentals of calculus

Teaching Methodologies	Lectures, Blended Learning, Tutorial, Discussion

CLO	CLO1	Use algebraic techniques to find composite and inverse of functions.
	CLO2	Use the product, quotient, and chain rules to differentiate power functions, general exponential , logarithmic and trigonometric functions.
	CLO3	Evaluate indefinite and definite integrals of power functions, general exponential, logarithmic and trigonometric functions.
	CLO4	Evaluate indefinite and definite integrals by using the techniques of substitution and by parts.
	CLO5	Find the area of a region bounded by a curve(s) and the axis's.

Pre-Requisite Courses	No course recommendations

Topics
1. Learning of Calculus 1.1) Historical perspective 1.2) Calculus and its application
2. Functions 2.1) Function and relation 2.2) Root(s) of function 2.3) Composite and inverse functions 2.4) Graph of functions
3. Differentiation 3.1) The Derivatives of power Functions 3.2) Derivatives of Logarithmic, Exponential and Trigonometric Functions 3.3) The Derivative and the Tangent Line Problem 3.4) Application of Differentiation
4. Integration 4.1) Indefinite of a given power integral; 4.2) Indefinite integral of a trigonometric; exponential and logarithmic function; 4.3) Equation of a curve from its gradient function 4.4) Application of Integration

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%	CLO1 , CLO2 , CLO3 , CLO4 , CLO5
	Discussion	i-Discuss	10%	CLO1 , CLO2 , CLO3 , CLO4 , CLO5
	Test	Test 1	20%	CLO1 , CLO2
	Test	Test 2	20%	CLO3 , CLO4

Reading List	Recommended Text	Howard Anton, Irl Bivens and Stephen Davis 2014, *Calculus*, 10 Ed., John Wiley & sons Inc
		Thomas, G. B. 2009, *Thoma's Calculus*, 12 Ed., Pearson
		hunt 2010, *Calculus*, 2 Ed., Addision Wesley
		Larson, R. & Edwards, B.H. 2010, *Calculus*, 9 Ed., Calif.: Brooks/Cole Cengage Learning
		Smith, R . , & Minton, R. B. 2008, *Calculus*, 3 Ed., McGraw Hill Higher Education
		Stewart, J. 2009, *Calculus*, 6 Ed., Thomsons/Cole
Article/Paper List	This Course does not have any article/paper resources	
Other References	This Course does not have any other resources	