Course Specifications

General Information

Course name	Calculus (1)
Course number	MATH1320
Faculty	
Department	
Course type	College Needs
Course level	1
Credit hours (theoretical)	3
Credit hours (practical)	0
Course Prerequisites	

Course Objectives

1 - Studying Continuous Functions
2 - Have the Knowledge of Algebra, Functions and Trigonometry
3 - Studying the Limits and Techniques for Finding Limits
4 - Have the Knowledge of Tangent Lines, Definition of Derivative and Techniques of Differentiation
5 - Studying Derivatives of the Trigonometric Functions
6 - Studying Increments and Differentials, the Chain Rule and Implicit Differentiation
7 - Studying Extrema of Functions and the Mean Value Theorem
8 - Studying the First Derivative Test, Concavity and the Second Derivative Test
9 - Studying Summary of Graphical Methods
10 - Have the Knowledge of Antiderivatives and Indefinite Integrals, Change of Variables in Indefinite Integrals
11 - Studying Definite Integral, Properties of the Definite Integral and The Fundamental Theorem of Calculus
12 - Studying Area and Solids of Revolution
13 - Studying Volumes by Cylindrical Shells
14 - Have the Knowledge of Arc Length and Surfaces of Revolution

Intended Learning Outcomes

Knowledge and Understanding	* Understand the completeness of the real line * Understand the concept and theory of limit * Understand the concept and theory of continuity * Understand the concept and theory of differentiation * Apply the basic techniques of integration
Intellectual Skills	* Upon successful completion of this course, students are able to recite definitions and demonstrate intuitive understanding of limits, derivatives, and definite integrals; state and prove major theorems of calculus

Course Contents

1 - Real line, Inequalities, Absolute value, Coordinate planes, Equation of straight line, Circles and Quadratic forms, Functions, Trigonometry, Limits & Continuity, Differentiation and its techniques, Increments and Differentials, Chain Rule and Implicit differentiation, Application of derivative, Integrals, Applications of Definite integrals

Teaching and Learning Methods

1 - Lectures

2 - Discussions

Students Assessment

Assessment Method	TIME	MARKS
Quizes		30%
Midterm Exam		30%
Final Exam		40%

Books and References

Essential books	Earl W. Swokowski, Calculus, Fifth Edition.
Recommended books	All Calculus and Analytic Geometry Books.