Revised: 11/2020

COURSE STRUCTURE

Name of Course: FUNDAMENTALS OF MATHEMATICS

Course Code: MAT1103

Credit Hours: 3

Prerequisite/co-requisite: None

Summary: This course is based on concepts of algebra where the students will study about rational expressions, radicals and rational exponents, quadratic functions, inequalities and algebra of functions, exponential and logarithmic functions, the binomial theorem, arithmetic and geometric sequences and probability.

Course Learning Outcomes:

Upon completing this course, the students will be able to:

CLO1: Apply the concepts of algebra and calculus to solve mathematical related problems. (C3, PLO1)

CLO2: Solve algebra related problems graphically. (C3, PLO7)

CLO3: Analyze different types of discrete structure by using the skills of reasoning and the properties of discrete structures. (C4, PLO2)

Course Format:

Total Student Learning Time (SLT) (L = Lecture; T = Tutorial; P = Practical; EL = E-Learning)**:**					
Learning Hours				**Independent Learning (hr)**	**Total Student Learning Time (hr)**
L	T	P	EL		
14	14	0	14	78	120

Teaching and Delivery Methods/ Teaching Methodology:

Lectures, Tutorial and Practical/Laboratory work delivered in a combination of blended & independent learning

E-Learning provided by INTI makes learning more accessible and convenient for the students. The blended model utilized by INTI is the integration of E-learning via INTI's Learning Management System and the conventional lecturer-led classroom activities. INTI students are required to access to the online learning materials (additional notes, reading materials, online assessments, discussion forums and etc.), so as to acquire a complete learning process. This also promotes self-directed learning in encouraging INTI students to be independent learners.

Syllabus:

Course Content Outline	CLO*
Equations and Inequalities - Equations. Applications of linear equations. Quadratic equations. Applications of quadratics equations. Polynomial and radical equations. Inequalities. Absolute value.	1,3
The Rectangular Coordinate System and Graphs Of Equations - The rectangular coordinate system. The slope of a nonvertical line. Writing equations of lines. Graphs of equations.	1, 2,3
Functions - Functions and function notation. Quadratic functions. Translating and stretching graphs. Rational functions. Operations on functions. Inverse functions.	1,3
Exponential and Logarithmic Functions - Exponential functions and their graphs. Applications of exponential functions. Logarithmic functions and their graphs. Applications of logarithmic functions.	1,3
Linear Systems And Quadratic Systems -Systems of linear equations. Graphs of linear inequalities. Solving simultaneous second-degree equations.	1, 2,3
Natural-Number Functions and Probability - The binomial theorem. Arithmetic sequences. Geometric sequences.	1,3
Differentiation and Integration - Differentiate and integrate basic power, ex, log or non-trigonometric terms and to calculate the maximum and minimum values.	1,3

Student Evaluation:

Continuous Assessment		**Percentage (%)**	**CLO**
1	Test 1	20	1
2	Test 2	20	3
3	Assignment	20	2
4			
Final Assessment		**Percentage (%)**	**CLO**
Final Exam		40	3
Total		**100%**	

Final exam format:
Duration: 2 hours
The students will be required to answer:
Section A: **Answer All**
Section B: **Answer All**

Grading Scale:
A+ (90-100), A (80–89), A- (75-79), B+ (70-74), B (65–69), B- (60–64), C+ (55–59) C (50–54), C- (45–49), D (40–44), F (0–39), RP (Resit Pass) Marks capped at 50, RF (Resit Fail) (0-49)

IMPORTANT NOTE:
STUDENTS ARE REQUIRED TO **"PASS"** BOTH CONTINUOUS AND FINAL ASSESSMENT IN ORDER TO PASS THE SUBJECT.

Additional Information:

Main Reference(s) Supporting Course:

1. RockswCurrent G.K. & Krieger T.A. (2018). Beginning and Intermediate Algebra with Applications & Visualization 4th ed., Pearson.

Additional References:

1. Thomas G.B., Weir M.D. & Hass J.R. (2019), Thomas' Calculus in SI Units 14th ed., Pearson.