MATH 10C Course Outline

6 credits, 6 hours lecture

Course Description

Topics covered include linear SI metric and Imperial measurement and conversions; surface area and volume of 3D objects; right triangle trigonometry; apply the power laws with integral and rational exponents; perform all operations (addition, subtraction, multiplication, division) on polynomials; factor polynomials; identify, describe, interpret and analyze relations and functions; evaluate functional notation; determine domain and range; graph and define linear relations; solve linear systems of two relations.

Pre and Co-requisites

Prerequisite: AFM 100 or equivalent or permission of the Program Chair

Course Learning Outcomes (CLOs)

Upon successful completion of the course, the student shall be able to:

CLO 1 develop and apply the primary trigonometric ratios to solve problems that involve right triangles
CLO 2 demonstrate an understanding of powers with integral and rational exponents
CLO 3 demonstrate an understanding of factors of whole numbers by determining the

- Prime factors
- Greatest common factor
- Least common multiple
- Square root
- Cube root

CLO 4 demonstrate an understanding of irrational numbers by

- representing, identifying and simplifying irrational numbers
- ordering irrational numbers

CLO 5 demonstrate an understanding of the multiplication of polynomial expressions (limited to monomials, binomials and trinomials)
CLO 6 demonstrate an understanding of common factors and trinomial factoring
CLO 7 interpret and explain the relationships among data, graphs and situations
CLO 8 demonstrate an understanding of relations and functions
CLO 9 demonstrate an understanding of slope with respect to:

- rise and run
- line segments and lines
- rate of change
- parallel lines
- perpendicular lines

CLO 10 describe and represent linear relations, using
- words
- ordered pairs
- table of values
- graphs
- equations

CLO 11 represent a linear function, using functional notation
CLO 12 determine the characteristics of the graphs of linear relations, including the:
- intercepts
- slope
- domain
- range

CLO 13 relate linear relations expressed (in the following formats) to their graphs:
- slope-intercept form ($y=mx+b$)
- general form ($Ax+By+C=0$)
- slope-point form $(y-y_1=m(x-x_1))$

CLO 14 determine the equation of a linear relation (given the information below) to solve problems
- a graph
- a point and the slope
- two points
- a point and the equation of a parallel or perpendicular line

CLO 15 solve problems that involve systems of linear equations in two variables, graphically and algebraically.

Evaluation

Assessment Type	Percentage
Assignments	20%
Quizzes	10%
Midterm Exam (Chapters 2, 3, 4)	35%
Final Exam (Chapters 5, 6, 7)	35%

Course Completion Requirements

Minimum passing mark of 50% or D is required.

Grading Scale

4.0 Grade Scale	Alpha Grade	Percentage Grade
4.0	A+	93-100
4.0	A	85-92.9
3.7	A-	80-84.9
3.3	B+	77-79.9
3.0	B	74-76.9
2.7	B-	70-73.9
2.3	C+	67-69.9
2.0	C	64-66.9
1.7	C-	60-63.9
1.3	D+	55-59.9
1.0	D	50-54.9
0.0	F	0-49.9

Land Acknowledgement

We respectfully acknowledge that Keyano College is on Treaty No. 8 Territory, the ancestral and traditional territory of the Cree, Dene, and Métis people.

Review Date: March 4, 2024