College and Career Preparation

Winter, 2018

MATH 10C-A, Mathematics 10C
6 credits, 6 hours lecture

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.

Alberta Education Course Equivalency: Math 10C
Prerequisite: AFM 009 or permission of the Program Chair

Instructor

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Office Hours

Monday	10:00 – 11:50
Wednesday	10:00 – 11:50
Thursday	11:00 – 11:50

Hours of Instruction

Monday	11:00 – 12:50 in Room CC215
Wednesday	11:00 – 12:50 in Room CC215
Thursday	9:00 – 10:50 in Room CC283

Required Resources:

Pearson: Foundations and Precalculus Mathematics 10 by Garry Davis et al, ISBN 0-321-62684-2

Other Supplies:
Scientific calculator or a graphing calculator. Casio fx-260 solar is preferred
Geometry set, including ruler
Graph paper

Course Outcomes:

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

- develop and apply the primary trigonometric ratios to solve problems that involve right triangles
- demonstrate an understanding of powers with integral and rational exponents
- demonstrate an understanding of factors of whole numbers by determining the
    - Prime factors
    - Greatest common factor
    - Least common multiple

- o Square root
- o Cube root
- demonstrate an understanding of irrational numbers by
    - o representing, identifying and simplifying irrational numbers
    - o ordering irrational numbers
- demonstrate an understanding of the multiplication of polynomial expressions (limited to monomials, binomials and trinomials)
- demonstrate an understanding of common factors and trinomial factoring
- interpret and explain the relationships among data, graphs and situations
- demonstrate an understanding of relations and functions
- demonstrate an understanding of slope with respect to:
    - o rise and run
    - o line segments and lines
    - o rate of change
    - o parallel lines
    - o perpendicular lines
- describe and represent linear relations, using
    - o words
    - o ordered pairs
    - o table of values
    - o graphs
    - o equations
- represent a linear function, using functional notation
- determine the characteristics of the graphs of linear relations, including the:
    - o intercepts
    - o slope
    - o domain
    - o range
- relate linear relations expressed (in the following formats) to their graphs:
    - o slope-intercept form ($y=mx+b$)
    - o general form ($Ax+By+C=0$)
    - o slope-point form $(y-y_1=m(x-x_1))$
- determine the equation of a linear relation (given the information below) to solve problems
    - o a graph
    - o a point and the slope
    - o two points
    - o a point and the equation of a parallel or perpendicular line
- solve problems that involve systems of linear equations in two variables, graphically and algebraically.

Evaluation:

Assignments	35%
Midterm Exam (Chapters 2, 3, 4)	30%
Final Exam (cumulative)	35%

The minimum pre-requisite for progression is 1.7 (refer to Grading System below)

Grading System

Descriptor	4.0 Scale	Percent
	4.0	96 – 100
Excellent	4.0	90 – 95
	3.7	85 – 89
	3.3	81 – 84
Good	3.0	77 – 80
	2.7	73 – 76
	2.3	69 – 72
Satisfactory	2.0	65 – 68
Minimum Prerequisite	1.7	60 – 64
Poor	1.3	55 – 59
Minimum Pass	1.0	50 – 54
Failure	0.0	0 – 49

Proposed Schedule of Topics

Unit #	Unit Topic	Approximate Time	Text References
1	Measurement	2 weeks	Chapter 2: Trigonometry
2	Algebra and Numbers	4 weeks	Chapter 3: Factors and Products Chapter 4: Roots and Powers
Midterm Exam – Chapters 2, 3, 4 Tentatively Scheduled for February 28, 2018			
3	Relations and Functions	3 weeks	Chapter 5: Relations and Functions Chapter 6: Linear Functions
4	Systems of Equations	3 weeks	Chapter 7: Systems of Linear Equations
Final Exam – All Chapters Scheduled Between April 16-20, 2018			

Calendar of Important Events - *Dates on the following calendar are tentative; shaded areas indicate* <u>*no*</u> *Math 10C classes.*

Week	Monday	Tuesday	Wednesday	Thursday	Friday
1	January 8 *First Math 30-3 Class* *Chapter 2*	9	10 *Chapter 2*	11 *Chapter 2*	12
2	15 *Chapter 2*	16	17 *Chapter 2*	18 *Chapter 2*	19
3	22 *Chapter 3*	23	24 *Chapter 3*	25 *Chapter 3*	26
4	29 *Chapter 3*	30	31 *Chapter 3*	Feb 1 *Chapter 3*	2
5	5 *Chapter 4*	6	7 *Chapter 4*	8 *Chapter 4*	9
6	12 *Chapter 4*	13	14 *Chapter 4*	15 *Chapter 4*	16
7	19 Family Day Holiday College Closed	20 Reading Day – No Classes	21 Reading Day – No Classes	22 Reading Day – No Classes	23 Reading Day – No Classes
8	26 *Review*	27	28 *Midterm Exam*	Mar 1 *Chapter 5*	2
9	5 *Chapter 5*	6	7 *Chapter 5*	8 *Chapter 5*	9
10	12 *Chapter 5*	13	14 *Chapter 5*	15 *Chapter 5*	16
11	19 *Chapter 6*	20	21 *Chapter 6*	22 *Chapter 6*	23
12	26 *Chapter 6*	27	28 *Chapter 6*	29 *Chapter 6*	30 Good Friday Holiday College Closed
13	Apr 2 Easter Monday College Closed	3	4 *Chapter 7*	5 *Chapter 7*	6
14	9 *Chapter 7*	10	11 *Chapter 7*	12 *Last Day of Classes* *Final Review*	13
15	16 Final Exams	17 Final Exams	18 Final Exams	19 Final Exams	20 Final Exams

<u>Please Note:</u>
Date and time allotted to each topic is subject to change.

Final exams are scheduled by the College. Do <u>not</u> book travel until April 21, 2018

Performance Requirements

Student Responsibilities

It is your responsibility as a student to contact the Office of the Registrar to complete the forms for Withdrawal or Change of Registration, and any other forms. Please refer to the list of important dates as noted in the Academic Schedule in the Keyano College Credit Calendar.

More specific details are found in the Student Rights and Student Code of Conduct section of the Keyano College credit calendar. It is the responsibility of each student to be aware of the guidelines outlined in the Student Rights and Student Code of Conduct Policies.

Student Attendance

Class attendance is useful for two reasons. First, class attendance maximizes a student's learning experience. Second, attending class is a good way to keep informed of matters relating to the administration of the course (e.g., the timing of assignments and exams). Ultimately, you are responsible for your own learning and performance in this course.

It is the responsibility of each student to be prepared for all classes. Students who miss classes are responsible for the material covered in those classes and for ensuring that they are prepared for the next class, including the completion of any assignments and / or notes that may be due.

Academic Misconduct

Students are considered to be responsible adults and should adhere to principles of intellectual integrity. Intellectual dishonesty may take many forms, such as:

- Plagiarism or the submission of another person's work as one's own
- The use of unauthorized aids in assignments or examinations (cheating)
- Collusion or the unauthorized collaboration with others in preparing work
- The deliberate misrepresentation of qualifications
- The willful distortion of results or data
- Substitution in an examination by another person
- Handing in the same unchanged work as submitted for another assignment
- Breach of confidentiality.

The consequences for academic misconduct range from a verbal reprimand to expulsion from the College. More specific descriptions and details are found in the Student Rights and Student Code of Conduct section of the Keyano College credit calendar. It is the responsibility of each student to be aware of the guidelines outlined in the Student Rights and Student Code of Conduct Policies.

In order to ensure your understanding of the concept of plagiarism, you must successfully complete the online tutorial found on ilearn.keyano.ca. Then print the certificate, sign it, and show it to each of your instructors. Your course work will not be graded until you show this signed certificate.

Specialized Supports

Counselling and Accessibility Services

Counselling Services provides a wide range of specialized counselling services to prospective and registered students, including personal, career and academic counselling.

SKILL Centre

The SKILL Centre is a learning space in the Clearwater Campus at Keyano College where students can gather to share ideas, collaborate on projects and get new perspectives on learning from our tutorial staff.

The SKILL Centre, through a variety of delivery methods, provides assistance in skill development to Keyano students. Assistance is provided by instructors, staff and student tutors. Individuals wishing to improve their mathematics, writing, grammar, study, or other skills, can take advantage of this unique service.