Course Outline

MATH 10-3A, Mathematics 10-3
5 credits, 5 hours lecture

The primary focus of this course is the development of spatial sense through direct and indirect measurement. Using imperial and metric units, fractions and decimals, students will describe the relationship among, and solve problems involving, length, area, volume, capacity, mass, temperature, angles, triangles and polygons. Students will also solve problems that require manipulation and application of formulas related to perimeter, area, primary trigonometric ratios, Pythagorean's theorem, income and unit pricing.

Alberta Education Course Equivalency: Math 10-3
Prerequisite: AFM 009 or equivalent or permission from the Program Chair

Instructor

Lisa Turner
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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 – 9:50 in Room CC283

Required Resources

MathWorks 10 Workbook, Pacific Educational Press, ISBN 978-1-89576-651-6
Scientific calculator (Casio fx-260 solar is preferred), geometry set, paper, pens, pencils and erasers are required.

Course Outcomes

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

- Demonstrate an understanding of the Système International (SI) by:
    - describing the relationships of the units for length, area, volume, capacity, mass and temperature
    - applying strategies to demonstrate an understanding of the imperial system
- Describe the relationships of the units for length, area, volume, capacity, mass and temperature
    - Compare the American and British imperial units for capacity.
    - Apply strategies to convert imperial units to SI units and convert SI units to imperial units.
    - Solve and verify problems that involve SI and imperial linear measurements, including decimal and fractional measurements.

- Solve problems that involve SI and imperial area measurements of regular, composite and irregular 2-D shapes and 3-D objects, including decimal and fractional measurements, and verify the solutions.
- Analyze puzzles and games that involve spatial reasoning, using problem-solving strategies.
- Demonstrate an understanding of the Pythagorean theorem by:
  - identifying situations that involve right triangles
  - verifying the formula
  - applying the formula
  - solving problems
- Demonstrate an understanding of similarity of convex polygons, including regular and irregular polygons.
- Demonstrate an understanding of primary trigonometric ratios (sine, cosine, tangent) by:
  - applying similarity to right triangles
  - generalizing patterns from similar right triangles
  - applying the primary trigonometric ratios
  - solving problems
- Solve problems that involve parallel, perpendicular and transversal lines, and pairs of angles formed between them.
- Demonstrate an understanding of angles, including acute, right, obtuse, straight and reflex, by:
  - Drawing
  - replicating and constructing
  - bisecting
  - solving problems
- Solve problems that involve unit pricing and currency exchange, using proportional reasoning.
- Demonstrate an understanding of income, including:
  - Wages
  - Salary
  - Contracts
  - Commissions
  - Piecework
- Solve problems that require the manipulation and application of formulas related to:
  - Perimeter
  - Area
  - Pythagorean theorem
  - primary trigonometric ratios
  - income

Evaluation

Assignments	35%
Midterm Exam	30%
Final Exam	35%
Total	100%

The minimum pre-requisite for progression is 1.7 (refer to Grading System on following page)

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 (see calendar below)

Proposed Time Frame	Chapter and Chapter Sections
January 8 – 17	Chapter 1: Unit Pricing and Currency • 1.1: Proportional Reasoning • 1.2: Unit Price • 1.3: Setting Price • 1.4: On Sale • 1.5: Currency Exchange
January 18 - 29	Chapter 2: Earning an Income • 2.1: Wages and Salaries • 2.2: Alternate Ways to Earn Money • 2.3: Additional Earnings • 2.4: Deductions and Net Pay
January 31 – February 12	Chapter 3: Length, Area, and Volume • 3.1: Systems of Measurement • 3.2: Converting Measurement • 3.3: Surface Area • 3.4: Volume
February 14 – March 5	Chapter 4: Mass, Temperature, and Volume • 4.1: Temperature Conversion • 4.2: Mass in the Imperial System • 4.3: Mass in the Systeme Internationale • 4.4: Making Conversions
March 7, 2018	Midterm Exam
March 8 – 19	Chapter 5: Angles and Parallel Lines • 5.1: Measuring, Drawing, and Estimating Angles • 5.3: Non-Parallel Lines and Transversals • 5.4: Parallel Lines and Transversals
March 21 - 29	Chapter 6: Similarity of Figures • 6.1: Similar Polygons • 6.2: Determining if Two Polygons are Similar • 6.4: Similar Triangles
April 4 – 12	Chapter 7: Trigonometry of Right Angles • 7.1: The Pythagorean Theorem • 7.2: The Sine Ratio • 7.3: The Cosine Ratio • 7.4: The Tangent Ratio • 7.5: Finding Angles and Solving Right Triangles
April 12, 2018	Final Exam Review Last Day of Class: Thursday, April 12, 2018
Final Exam Period	April 16-20, 2018

Calendar of Important Events - *Dates on the following calendar are tentative; shaded areas indicate <u>no</u> Math 10-3 classes.*

Week	Monday	Tuesday	Wednesday	Thursday	Friday
1	Jan 8 First Math 10-3 Class *Chapter 1*	9	10 *Chapter 1*	11 *Chapter 1*	12
2	15 *Chapter 1*	16	17 *Chapter 1*	18 *Chapter 2*	19
3	22 *Chapter 2*	23	24 *Chapter 2*	25 *Chapter 2*	26
4	29 *Chapter 2*	30	31 *Chapter 3*	Feb 1 *Chapter 3*	2
5	5 *Chapter 3*	6	7 *Chapter 3*	8 *Chapter 3*	9
6	12 *Chapter 3*	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 *Chapter 4*	27	28 *Chapter 4*	Mar 1 *Chapter 4*	2
9	5 *Chapter 4 & Review*	6	7 *Midterm Exam*	8 *Chapter 5*	9
10	12 *Chapter 5*	13	14 *Chapter 5*	15 *Chapter 5*	16
11	19 *Chapter 5*	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 *Chapter 7 & Review*	13 Last Day of Classes
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

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.