College and Career Preparation

Winter, 2015

MATH 10-3M, MATHEMATICS 10-3

5 credits, 16 weeks, 5 hours / week

This course is intended for students wishing to pursue post-secondary studies in trades, certified occupations or direct entry into the workforce. It covers the following aspects of mathematics – communication, connections, mental math and estimation, problem-solving, reasoning, technology, visualization and critical thinking.
The curriculum is delivered through projects, activities and problems set in real-world contexts.

Prerequisite: AFM 009

Instructor

Linda Mason
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Office Hours

Office Hours: Monday – Thursday   (8.30 – 9.00am)
Monday – Wednesday   (12.00 – 1.00pm)

Hours of Instruction

Monday / Wednesday   **(9.00 -11.00)**
Thursday (**9.00 – 10.00)**

Required Resources

1. Mathworks 10 – Pacific Educational Press. ISBN 978-1-89576-694-3
2. Geometry set
3. Scientific calculator
4. Binder, lined paper, pencils
5. Teacher prepared materials as required

Course Outcomes

It is expected that students will:-
- Solve problems that involve unit pricing and currency exchange, using proportional reasoning.
- Demonstrate an understanding of income, - wages, salary, contracts, commissions, piecework to calculate gross pay and net pay.
- Solve problems that require the manipulation of formulas related to income.
- Demonstrate an understanding of the SI measurement system and its units and applying strategies to convert SI units to imperial units.
- Demonstrate an understanding of the imperial system and its units and be able to convert imperial units to SI 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.
- Solve problems that require the manipulation and application of formulas related to perimeter, area, the Pythagorean Theorem, primary trigonometric ratios, and income.
- Develop an understanding of the Systeme International (SI) by describing the relationships of the units for length, area, volume, capacity, mass, and temperature; and applying strategies to convert SI units to imperial units.
- Demonstrate an understanding of the imperial system by describing the relationships of the units for length, area, volume, capacity, mass, and temperature; comparing the American and British imperial units for capacity; and applying strategies to convert imperial units to SI units.
- 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, and solving problems.
- Demonstrate an understanding of similarity of convex polygons, including regular and irregular polygons.
- Develop an understanding of the Pythagorean Theorem by identifying situations that involve right triangles, verifying the formula, applying and manipulating the formula, and solving problems.
- 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, manipulating the formula and solving problems.

Evaluation

Module Assignments	**70%**
Final Exam	**30%**
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

WEEK	DATES	UNIT	TOPIC	TESTS
1 & 2	Jan 5 – 16	1	**Unit Pricing and Currency Exchange.** Proportional Reasoning; Unit price; Setting a Price; On Sale; Currency Exchange Rates.	Jan 16
3 & 4	Jan 19 – 27	2	**Earning an Income.** Wages and Salaries**;** Alternative ways to Earn Money; Additional Earnings; Deductions and Net Pay.	Jan 27
4 – 7	Jan 28 - Feb 17	3	**Length, Area and Volume.** Systems of measurement; Converting Measurements; Surface Area; Volume.	Feb 17
7 & 9	Feb 16 –	4	**Mass, Temperature and Volume.**	Mar 6

	20 & Mar 2 - 6		Temperature Conversions; Mass in the Imperial system; Making Conversions.	
8	Feb 23 - 27		**Reading Week**	
10 – 12	Mar 9 – 27	5	**Angles and Parallel Lines.** Measuring, Drawing and Estimating Angles; Angle Bisectors & Perpendicular Lines; Non-Parallel Lines & Transversals; Parallel Lines & Transversals.	Mar 27
13 & 14	Mar 30 – Apr 10	6	**Similarity of Figures.** Similar Polygons; Determining if two Polygons are similar; Drawing Similar Polygons; Similar Triangles.	Apr 10
15 & 16	Apr 13 - 22	7	**Trigonometry.** Pythagorean Theorem; Sine Ratio; Cosine Ratio; Tangent Ratio; Finding Angles & Solving Right Triangles.	Apr 22
	Apr 24 - 29		**Final Exams**	**Mon. Apr 27th**

Please Note:
Date and time allotted to each topic is subject to change. 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.

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

Penalties for academic offences range from a verbal reprimand to dismissal from the College, and in certain circumstances may involve legal action.

Specialized Supports

Counselling and Disability 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.

Authorization

This course outline has been reviewed and approved by the Program Chair.

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[First Name, Last Name], Instructor

Lisa Turner, Chair	Date Authorized

Guy Harmer, Dean	Date Authorized

Signed copies to be delivered to:
Instructor
Registrar's Office