Math 10-3 Section G

5 Credits, 16 weeks, 5 hours
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.

Pre-requisite: Math 9 or permission of the Program Chair.

Instructor

Melodee Helgason
Gregoire Lake Learning Centre
780 334-2559 Office
780 838-4361 cell (leave message)
melodee.helgason@keyano.ca

Office Hours

Monday 9:00 – 10:00 and 4:00 – 5:00
Tuesday 9:00 – 10:00
Wednesday 9:00 – 10:00
Thursday 9:00 – 10:00

Hours of Instruction

Tuesday 10:00 – 12:00
Wednesday 11:00 – 12:00 and 3:00 – 4:00
Thursday 12:00 – 1:00

Required Resources

Course Outcomes

Upon successful completion of Math 10-3, students will be able to:

Measurements

- 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
- 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
  - the Pythagorean theorem
  - primary trigonometric ratios
Evaluation

Assignments  35%
Unit Tests     40%
Final Exam    25%
Total          100%

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

**Grading System**

<table>
<thead>
<tr>
<th>Descriptor</th>
<th>4.0 Scale</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excellent</td>
<td>4.0</td>
<td>96 – 100</td>
</tr>
<tr>
<td></td>
<td>3.7</td>
<td>85 – 89</td>
</tr>
<tr>
<td>Good</td>
<td>3.0</td>
<td>77 – 80</td>
</tr>
<tr>
<td></td>
<td>2.7</td>
<td>73 – 76</td>
</tr>
<tr>
<td>Satisfactory</td>
<td>2.0</td>
<td>65 – 68</td>
</tr>
<tr>
<td><strong>Minimum Prerequisite</strong></td>
<td>1.7</td>
<td>60 – 64</td>
</tr>
<tr>
<td>Poor</td>
<td>1.3</td>
<td>55 – 59</td>
</tr>
<tr>
<td>Minimum Pass</td>
<td>1.0</td>
<td>50 – 54</td>
</tr>
<tr>
<td>Failure</td>
<td>0.0</td>
<td>0 – 49</td>
</tr>
</tbody>
</table>
Proposed Schedule of Topics

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

Chapter 2: Earning an Income
   2.1. Wages and Salaries
   2.2. Alternate Ways to Earn Money
   2.3. Additional Earning
   2.4. Deductions and Net Pay

Chapter 3: Length, Area and Volume
   3.1. Systems of Measurements
   3.2. Converting Measurements
   3.3. Surface Area
   3.4. Volume

Chapter 4: Mass, Temperature, and Volume
   4.1. Temperature Conversion
   4.2. Mass in the Imperial System
   4.3. Mass in the Systeme International
   4.4. Making Conversion

Chapter 5: Angle and Parallel Lines
   5.1. Measuring, Drawing, and Estimating Angles
   5.2. Angles Bisectors and Perpendicular Lines
   5.3. Non-Parallel Lines and Transversal
   5.4. Parallel Lines and Transversal

Chapter 6: Similarity of Figures
   6.1. Similar Polygons
   6.2. Determining if Two polygons and Similar
   6.3. Drawing similar Polygons
   6.4. Similar Triangles

Chapter 7: Trigonometry of Right Triangles
   7.1. The Pythagorean Theorem
   7.2. The Sine Ratio

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.
Performance Requirements

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.

Melodee Helgason, Instructor

Lisa Turner, Chair                                Date Authorized

Guy Harmer, Dean                                 Date Authorized