**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 theorem, income and unit pricing.

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

**Instructor**

Lisa Turner
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780-791-4973
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**Office Hours**

Monday          2:00 – 2:50 in CC245A
Tuesday         2:00 – 2:50 in CC245A
Thursday        2:00 – 2:50 in CC245A

**Hours of Instruction**

Monday          12:00 – 1:50 in Room S210
Tuesday         12:00 – 1:50 in Room S210
Thursday        12:00 – 12:50 in Room S210

**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:
    o describing the relationships of the units for length, area, volume, capacity, mass and temperature
    o applying strategies to demonstrate an understanding of the imperial system
- Describe the relationships of the units for length, area, volume, capacity, mass and temperature
    o Compare the American and British imperial units for capacity.
    o Apply strategies to convert imperial units to SI units and convert SI units to imperial units.
    o 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:
    o identifying situations that involve right triangles
    o verifying the formula
    o applying the formula
    o 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:
    o applying similarity to right triangles
    o generalizing patterns from similar right triangles
    o applying the primary trigonometric ratios
    o 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:
    o Drawing
    o replicating and constructing
    o bisecting
    o solving problems
- Solve problems that involve unit pricing and currency exchange, using proportional reasoning.
- Demonstrate an understanding of income, including:
    o Wages
    o Salary
    o Contracts
    o Commissions
    o Piecework
- Solve problems that require the manipulation and application of formulas related to:
    o Perimeter
    o Area
    o Pythagorean theorem
    o primary trigonometric ratios
    o income

**Evaluation**

| | | |
|---|---|---|
| Assignments (six in total) | 30% | |
| Chapter Tests (five in total) | 35% | |
| Final Exam (cumulative) | 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 |
|---|---|
| September 7-17 | Chapter 7: Trigonometry of Right Angles<br>• 7.1: The Pythagorean Theorem<br>• 7.2: The Sine Ratio<br>• 7.3: The Cosine Ratio<br>• 7.4: The Tangent Ratio<br>• 7.5: Finding Angles and Solving Right Triangles<br>***ASSIGNMENT*** |
| September 18-October 1 | Chapter 1: Unit Pricing and Currency<br>• 1.1: Proportional Reasoning<br>• 1.2: Unit Price<br>• 1.3: Setting Price<br>• 1.4: On Sale<br>• 1.5: Currency Exchange<br>***ASSIGNMENT AND CHAPTER 1 TEST*** |
| October 7-15 | Chapter 2: Earning an Income<br>• 2.1: Wages and Salaries<br>• 2.2: Alternate Ways to Earn Money<br>• 2.3: Additional Earnings<br>• 2.4: Deductions and Net Pay<br>***ASSIGNMENT AND CHAPTER 2 TEST*** |
| October 16-November 5 | Chapter 3: Length, Area, and Volume<br>• 3.1: Systems of Measurement<br>• 3.2: Converting Measurement<br>• 3.3: Surface Area<br>• 3.4: Volume<br>***ASSIGNMENT AND CHAPTER 3 TEST*** |
| November 6-22 | Chapter 4: Mass, Temperature, and Volume<br>• 4.1: Temperature Conversion<br>• 4.2: Mass in the Imperial System<br>• 4.3: Mass in the Systeme Internationale<br>• 4.4: Making Conversions<br>***ASSIGNMENT AND CHAPTER 4 TEST*** |
| November 26-December 5 | Chapter 5: Angles and Parallel Lines<br>• 5.1: Measuring, Drawing, and Estimating Angles<br>• 5.3: Non-Parallel Lines and Transversals<br>• 5.4: Parallel Lines and Transversals<br>***ASSIGNMENT AND CHAPTER 5 TEST*** |
| December 6 | Final Exam Review<br>Last Day of Class: Thursday, December 6, 2018 |
| Final Exam Period | December 10 – 18, 2018 |

***Please Note:***
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 December 19, 2018.***

**Calendar of Important Events -** *Dates on the following calendar are tentative; shaded areas indicate no Math 10-3 classes.*
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| Week | Monday | Tuesday | Wednesday | Thursday | Friday |
|---|---|---|---|---|---|
| 1 | Sept 3<br>Labour Day | 4<br>Orientation Day | 5 | 6<br>*First Day of Math Introduction and Chapter 7* | 7 |
| 2 | 10<br>*Chapter 7* | 11<br>*Chapter 7* | 12 | 13<br>*Chapter 7* | 14 |
| 3 | 17<br>*Chapter 7* | 18<br>*Chapter 1* | 19 | 20<br>*Chapter 1* | 21 |
| 4 | 24<br>*Chapter 1* | 25<br>*Chapter 1* | 26 | 27<br>*Chapter 1* | 28 |
| 5 | Oct 1<br>*Chapter 1 Test* | 2<br>*Chapter 2* | 3 | 4<br>*Chapter 2* | 5 |
| 6 | 8<br>Thanksgiving Day Holiday | 9<br>*Chapter 2* | 10 | 11<br>*Chapter 2* | 12 |
| 7 | 15<br>*Chapter 2 Test* | 16<br>*Chapter 3* | 17 | 18<br>*Chapter 3* | 19 |
| 8 | 22<br>*Chapter 3* | 23<br>*Chapter 3* | 24 | 25<br>*Chapter 3* | 26 |
| 9 | 29<br>*Chapter 3* | 30<br>*Chapter 3* | 31 | Nov 1<br>*Chapter 3* | 2 |
| 10 | 5<br>*Chapter 3 Test* | 6<br>*Chapter 4* | 7 | 8<br>READING DAY | 9<br>READING DAY |
| 11 | 12<br>Remembrance Day Holiday (in lieu) | 13<br>*Chapter 4* | 14 | 15<br>*Chapter 4* | 16 |
| 12 | 19<br>*Chapter 4* | 20<br>*Chapter 4* | 21 | 22<br>*Chapter 4 Test* | 23 |
| 13 | 26<br>*Chapter 5* | 27<br>*Chapter 5* | 28 | 29<br>*Chapter 5* | 30 |
| 14 | Dec 3<br>*Chapter 5* | 4<br>*Chapter 5 Test* | 5 | 6<br>*Review and Last Day of Classes* | 7 |
| 15 | 10<br>EXAMS | 11<br>EXAMS | 12<br>EXAMS | 13<br>EXAMS | 14<br>EXAMS |
| 16 | 17<br>EXAMS | 18<br>EXAMS | 19 | 20 | 21 |

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

**Final exams are scheduled by the College. Do not book travel until December 19, 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**

The Student Academic Support Services (SASS) department: Accessibility Services, Skill Centre and Wellness Services, work together to support student success at Keyano College.

**Accessibility Services (CC167)** supports student success through group and individualized instruction of learning, study and test taking strategies, and adaptive technologies. Students with documented disabilities, or who suspect a disability, can meet with the Learning Strategists to discuss accommodation of the learning barriers that they may be experiencing. Students who have accessed accommodations in the past are encouraged to visit our office at their earliest opportunity to discuss the availability of accommodations in their current courses. Individual appointments can be made by calling 780-791-8934

**Skill Centre (CC119)** provides a learning space where students can gather to share ideas, collaborate on projects and get new perspectives on learning from our tutorial staff.  Students visiting the centre have access to one-to-one or group tutoring, facilitated study groups, and assistance in academic writing. The Skill Centre's Peer Tutor program provides paid employment opportunities for students who have demonstrated academic success and want to share what they have learned. Tutoring is available free to any students registered at Keyano College on a drop in basis, from 9:00 am to 5:00 pm Monday through Friday. Additional evening hours are subject to tutor availability and are posted in the Skill Centre.

**Wellness Services (CC260)** offers a caring, inclusive, and respectful environment where students can access free group and individual support to meet academic and life challenges.  Mental Health Coordinators offer a safe and confidential environment to seek help with personal concerns. The Mindfulness Room in CC260 is available as a quiet space for students to relax during regular office hours. Wellness Service welcomes students to participate in any of the group sessions offered throughout the academic year addressing such topics as Mindfulness and Text Anxiety. Individual appointments can be made by calling 780-791-8934.

**Please watch your Keyano email for workshop announcements from our Student Academic Support Services team.**