MATH 20-2A, Mathematics 20-2  
5 credits, 6 hours lecture

Topics covered include right angle trigonometry; manipulation and application of formulas; apply the power laws on integral and rational exponents; perform all operations (addition, subtraction, multiplication, division) on radicals; solve radical equations; graph and apply quadratic functions; solve quadratic equations; spatial reasoning

Alberta Education Course Equivalency: MATH 20-2  
Prerequisites: MATH 10, MATH 13, MATH 10-C, or permission from the Program Chair

Instructor

Christel Kennedy  
CC205-O  
(780) 791-4819  
christel.kennedy@keyano.ca

Office Hours

Monday  3:00 – 3:50  
Tuesday  1:00 – 1:50  
Wednesday  4:00 – 4:50  
Thursday  3:00 – 3:50  
Friday  12:00 – 12:50

Hours of Instruction

Tuesday  3:00 – 4:50  Room S216  
Wednesday  12:00 – 12:50  Room S216  
Thursday  1:00 – 2:50  Room CC224  
Friday  1:00 – 1:50  Room S218

Required Resources

Principles of Mathematics 11: Alberta (Nelson)  
Other supplies: TI83plus calculator, geometry set, graph paper, binder, ruled paper, pencils, pen, and eraser

Course Outcomes

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

- Solve problems that involve the application of rates.  
- Solve problems that involve scale diagrams using proportional reasoning.  
- Demonstrate an understanding of the relationships among scale factors, areas, surface areas and volumes of similar 2-D shapes and 3-D objects.  
- Derive proofs that involve the properties of angles and triangles.  
- Solve problems that involve properties of angles and triangles.
- Solve problems that involve the cosine law and the sine law, excluding the ambiguous case.
- Analyze and prove conjectures using inductive and deductive reasoning to solve problems.
- Analyze puzzles and games that involve spatial reasoning using problem solving strategies.
- Solve problems that involve operations on radicals and radical expressions with numerical and variable radicands (limited to square roots).
- Solve problems that involve radical equations (limited to square roots or cube roots).
- Demonstrate an understanding of the characteristics of quadratic functions, including
  - vertex
  - intercepts
  - domain and range
  - axis of symmetry
- Solve problems that involve quadratic equations.

**Evaluation**

<table>
<thead>
<tr>
<th>Assignment Type</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignments</td>
<td>20%</td>
</tr>
<tr>
<td>Tests</td>
<td>30%</td>
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<tr>
<td>Projects</td>
<td>10%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>40%</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
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*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>
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<tbody>
<tr>
<td>Excellent</td>
<td>4.0</td>
<td>96 – 100</td>
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<tr>
<td></td>
<td>4.0</td>
<td>90 – 95</td>
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<td></td>
<td>3.7</td>
<td>85 – 89</td>
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<tr>
<td>Good</td>
<td>3.3</td>
<td>81 – 84</td>
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<td></td>
<td>3.0</td>
<td>77 – 80</td>
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<td></td>
<td>2.7</td>
<td>73 – 76</td>
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<tr>
<td>Satisfactory</td>
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<td>69 – 72</td>
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<td>Minimum Prerequisite</td>
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<tr>
<td>Poor</td>
<td>1.3</td>
<td>55 – 59</td>
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<tr>
<td>Minimum Pass</td>
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<tr>
<td>Failure</td>
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<td>0 – 49</td>
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Proposed Schedule of Topics

<table>
<thead>
<tr>
<th>Duration</th>
<th>Chapter Title</th>
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<tbody>
<tr>
<td>2 weeks</td>
<td>Chapter 1: Inductive &amp; Deductive Reasoning</td>
</tr>
<tr>
<td>2 weeks</td>
<td>Chapter 2: Properties of Angles &amp; Triangles</td>
</tr>
<tr>
<td>1.5 weeks</td>
<td>Chapter 3: Acute Triangle Trigonometry</td>
</tr>
<tr>
<td>2 weeks</td>
<td>Chapter 4: Radicals</td>
</tr>
<tr>
<td>2 weeks</td>
<td>Chapter 6: Quadratic Functions</td>
</tr>
<tr>
<td>1.5 weeks</td>
<td>Chapter 7: Quadratic Equations</td>
</tr>
<tr>
<td>2 weeks</td>
<td>Chapter 8: Proportional Reasoning</td>
</tr>
</tbody>
</table>

**Please Note:**

Date and time allotted to each topic is subject to change.
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 students' learning experience. Second, attending class is a good way to keep informed of matters relating 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.
Authorization
This course outline has been reviewed and approved by the Program Chair.

________________________________________________________________________
Christel Kennedy, Instructor

________________________________________________________________________
Lisa Turner, Chair                                           Date Authorized

________________________________________________________________________
Vincella Thompson, Dean                                         Date Authorized

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