

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

Topics covered include right angle trigonometry; applications involving rates and ratios (scale relationships of 2D and 3D shapes); manipulation and application of formulas; apply the power laws on integral and rational exponents; evaluate absolute values; perform all operations (addition, subtraction, multiplication, division) on radicals; solve radical equations; graph and apply quadratic functions; solve quadratic equations; spatial reasoning. Extensions to the material may include a Business Prep module involving the interpretation and analysis of statistical data and the utilization of inductive and deductive reasoning to prove conjectures and a Trades prep module for further exploration of 3D objects (model, draw, describe scale diagrams, etc.) and the creation and interpretation of circle and line graphs.

*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

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[christel.kennedy@keyano.ca](mailto:christel.kennedy@keyano.ca)**Office Hours**

Monday	1:00 – 2:50
Tuesday	12:00 – 12:50
Thursday	12:00 – 12:50
Friday	12:00 – 12:50

**Hours of Instruction**

Monday	3:00 – 4:50	Room CC215
Wednesday	3:00 – 4:50	Room CC215
Thursday	3:00 – 4:50	Room CC215

**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

Assignments	20%
Tests	30%
Projects	10%
Attendance/Participation	5%
Final Exam	35%
Total	100%

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

### Grading System

Descriptor	4.0 Scale	Percent
Excellent	4.0	96 – 100
	4.0	90 – 95
	3.7	85 – 89
Good	3.3	81 – 84
	3.0	77 – 80
	2.7	73 – 76
Satisfactory	2.3	69 – 72
	2.0	65 – 68
<b>Minimum Prerequisite</b>	1.7	60 – 64
Poor	1.3	55 – 59
Minimum Pass	1.0	50 – 54
Failure	0.0	0 – 49

### Proposed Schedule of Topics

2 weeks	Chapter 1: Inductive & Deductive Reasoning
2 weeks	Chapter 2: Properties of Angles & Triangles
1.5 weeks	Chapter 3: Acute Triangle Trigonometry
2 weeks	Chapter 4: Radicals
2 weeks	Chapter 6: Quadratic Functions
1.5 weeks	Chapter 7: Quadratic Equations
2 weeks	Chapter 8: Proportional Reasoning

**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](http://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, Wellness Services and Student Life Department 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 8:30 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 Test Anxiety. Individual appointments can be made by calling 780-791-8934.

**Student Life Department (CC210)** is a place for students to go when they don't know who else can answer their questions. The staff will help students navigate barriers to success and if they don't know the answer, they will find it out. Student success is directly affected by how connected a student feels to their college. The student life department is there to help students get connected.

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