**Course Outline**

**MATH 260 A**
**Topics in Mathematics**
**Fall 2014**

**3 CREDITS**
**3 HOURS PER WEEK**

**INSTRUCTOR:   Matthew Morin**

## Instructor Information

Name:             Matthew Morin
Phone Number:     780-791-4831
Email:            matthew.morin@keyano.ca
Office Number:    S211E
Office Hours:     Monday:    11:00 – 11:50
                  Tuesday:   11:00 – 11:50
                  Wednesday  11:00 – 11:50
                  Thursday:  11:00 – 11:50
                  Friday:    11:00 – 11:50

## Hours of Instruction

Monday      13:00 – 13:50     Room S212
Wednesday   10:00 – 10:50     Room S210
Thursday    09:00 – 09:50     Room S210

## Course Description

Problem solving in different areas of mathematics.

(More specific details on course topics can be found in the course outcomes.)

## Prerequisites

Math 160 or teaching experience at elementary or junior high school level. This course is intended for Education students and is not open to science students.

## Required/Recommended Resources

**Textbook:** none

**Moodle**: Course information will be available through Moodle.
            http://ilearn.keyano.ca

## Course Outcomes

At the completion of the course, students will be able to:
- Use recreational methods to showcase mathematical ideas and methods.
- Create graphs to model a variety of problems and utilize the structure of the graphs in order to solve the problems.
- Convert between worded statements and logic notation and evaluate the truth value of a variety of compound statements.

- Analyze arguments using the theory of logic.
- Understand and apply geometric properties and relationships to determine the measure of angles and/or measure of sides within complex figures.
- Decide whether two triangles may be congruent or similar.
- Solve linear and quadratic equations using algebraic techniques.
- Apply elimination and substitution techniques to solve systems of linear equations.
- Enumerate outcomes using permutations, combinations, and the addition and multiplication rule.
- Calculate probabilities using the classical and empirical methods and describe the difference between these methods.
- Use the addition and multiplication rule to compute probabilities of events including "or" and "and" statements.

## Evaluation

| | |
|---|---|
| Assignments | 25% |
| Math Fair Participation | 5% |
| Midterm Examination | 25% |
| Final Examination | 45% |
| **Total:** | **100%** |

**Assignments**

Assignments will be assigned on an approximately week-by-week basis and will be weighted equally. Students are responsible to check Moodle often to keep apprised of the assignment problems and due dates. Assignments are to be handed-in on the due-date at the start of class. General guidelines for assignments are now described:

- Students may write in pen or pencil. However, the assignments must be neat and legible to be considered for marks. (Do not try to cram too much work in a small space!) The answer to each problem should be clearly indicated.
- If more than one page is being used, then the pages should be stapled together. (It is the student's responsibility to staple their assignment before class begins.)
- The assignment problems should be answered in order, with all work being shown.
- At the end of a "word problem," it is customary to complete the solution by writing out a sentence stating the final answer.

**Math Fair**

Keyano College will be holding a Math Fair near the end of the semester. This consists of a variety of math-involved puzzles that elementary

students will be working on. Our class will be responsible for facilitating many of these activities on the day of the fair.

**Tests**

The Midterm Exam and Final Exam will be closed-book. The Final Exam will be cumulative, but will focus on topics from the later topics. Any basic calculators (including scientific calculators) are allowed for use during tests, but graphing calculators are not. A general synopsis of topics covered by each test will be described in-class and will be posted on Moodle prior to each test.

**Grading System**

| Standing | Letter Grade | Grade Points |
|---|---|---|
| Excellent | A+ | 4.0 |
| | A | 4.0 |
| | A- | 3.7 |
| Good | B+ | 3.3 |
| | B | 3.0 |
| | B- | 2.7 |
| Satisfactory | C+ | 2.3 |
| | C | 2.0 |
| | C- | 1.7 |
| Poor | D+ | 1.3 |
| Min Pass | D | 1.0 |
| Failure | F | 0.0 |

# Performance Requirements

**Student Attendance**

Class attendance is essential for two reasons. First, class attendance is the primary way that we, as instructors, can facilitate a student's 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.

As is stated in the *Student Rights and Responsibilites* section of the Credit Calendar, "**Excessive or inexcusable absences can result in a poor or failing grade, loss or reduction of sponsor allowances, and/or probation or suspension**."

**Student Preparation**

It is the responsibility of each student to be prepared for all classes. To get the most out of the classroom experience, students should have read the appropriate section of the textbook prior to the class that it is covered.

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 readings that may be due.

**Plagiarism and Cheating**

Every student expects to be treated and evaluated fairly in a course. Plagiarism and cheating robs everyone of this right.

No student may submit words, ideas or data of another student or person as his or her own in any writing, project, assignment, quiz, electronic presentation, exam etc. Any work used that is not the student's own must be clearly cited as belonging to someone else. There are penalties for using other's work and not citing it. The Student's Rights & Responsibilities document clearly outlines these penalties and the appeal process.

- No learner can obtain information from another student during an exam.
- No learner can bring unauthorized information (paper or electronic) into an exam or quiz.
- No student can submit work done in another course for grading in this course without the written prior approval of the course instructor.
- No student can submit copyright protected or commercially produced materials as part or all of an assignment without proper citation & permission.

# COLLEGE POLICIES

### Equality, Equity and Respect

The Keyano College is committed to providing an environment of equality, equity and respect for all people within the College community. All members of this community are considered partners in developing teaching and learning contexts that are welcoming to all. Faculty, staff, and students are encouraged to use inclusive language to create a classroom atmosphere in which students' experiences and views are treated with equal respect and valued in relation to their gender, ethnic and cultural background, and sexual orientation.

Students should consult:
**http://www.keyano.ca/StudentLife/StudentConduct/IndividualRightsPolicy**

### Accommodation for Students with Disabilities

**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.
Disability Services provides educational services to students with disabilities.
Both Counselling and Disability Services are located in CC167.

## APPROXIMATE COURSE SCHEDULE

| Week | Dates | Topic |
|---|---|---|
| 1 | Sept. 2—Sept. 5 (Classes begin Sept. 3) | Two-Player Games |
| 2 | Sept. 8—Sept. 12 | Two-Player Games |
| 3 | Sept. 15—Sept. 19 | Logic: Statements and Connectives |
| 4 | Sept. 22—Sept. 26 | Logic: Truth Tables, Analyzing Arguments |
| 5 | Sept. 29—Oct. 3 | Basics of Graphs |
| 6 | Oct. 6—Oct. 10 | Circuits |
| 7 | Oct. 13—Oct. 17 (No Classes on Monday—**Thanksgiving**) | Graph Coloring **Midterm** |
| 8 | Oct. 20—Oct. 24 | Angles, Traversals |
| 9 | Oct. 27—Oct. 31 | Triangles, Congruence, Pythagoras |
| 10 | Nov. 3—Nov. 7 | Area, Linear Equations |
| 11 | Nov. 10—Nov. 14 (No Classes on Tuesday—**Remembrance Day**) | Systems of Linear Equations Quadratic Equations |
| 12 | Nov. 17—Nov. 21 | Counting |
| 13 | Nov. 24—Nov. 28 | Counting /Probability |
| 14 | Dec. 1—Dec. 5 | Probability |
| | Dec. 8 – Dec. 17 | **Exam Period** |

**_Please Note:_** This course outline may be modified to facilitate unforeseen time constraints. Date and time allotted to each topic is subject to change.

## IMPORTANT DATES TO REMEMBER

| | |
|---|---|
| Sept. 1 | Labour Day, College closed |
| Sept. 2 | Orientation Day, No classes. |
| Sept. 16 | Last day to DROP courses with full refund ($100 deposit is non-refundable) |
| Oct. 10 | Last day to WITHDRAW with a refund (50%) |
| Oct. 13 | Thanksgiving Day, College closed. |
| Nov. 11 | Remembrance Day Holiday, No classes. |
| Nov. 26 | Last day to WITHDRAW (Grade W) |
| Dec. 5 | Last day of classes |
| Dec. 8-12 | FINAL EXAM PERIOD. |

**Course Outline**


**UNIVERSITY STUDIES**


**MATH 260 A
Topics in Mathematics
Fall 2014**


**3 CREDITS
3 HOURS PER WEEK**


_____              _____
**Matthew Morin, Instructor**                          **Date**


## Reviewed and approved by:


_____              _____
**Louis Dingley, Chair**                               **Date**


_____              _____
**Guy Harmer, Dean**                                   **Date**