

**SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY**

**SAULT STE. MARIE, ONTARIO**



**SAULT  
COLLEGE**

**COURSE OUTLINE**

**COURSE TITLE:** Pre-Health Math 1

**CODE NO. :** MTH 135 **SEMESTER:** 1

**PROGRAM:** Pre-Health

**AUTHOR:** Mathematics Department

**DATE:** Jun 2015 **PREVIOUS OUTLINE DATED:** Jan 2015

"Colin Kirkwood" May 27/15

**APPROVED:**

\_\_\_\_\_  
**DEAN**

\_\_\_\_\_  
**DATE**

**TOTAL CREDITS:** 4

**PREREQUISITE(S):**

**HOURS/WEEK:** 4 hours per week

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**I. COURSE DESCRIPTION:**

This first level mathematics course for the pre-health program begins with a review of arithmetic operations with whole numbers, fractions, and decimals. Concepts of ratio, proportion, and percents are studied. A measurement section includes metric and imperial units, uncertainty and significant digits. This is followed by calculations involving order of operations, scientific notation, significant figures, and units of measure. Problems involving linear relationships are then solved using formula rearrangement, graphing, and algebraic methods.

**II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:**

Upon successful completion of this course, the student will demonstrate the ability to:

**Unit 1**

1. Add, subtract, multiply, and divide whole numbers, decimals, and signed numbers *without* a calculator.
2. Evaluate expressions following the order of operations.
3. Define and differentiate between accuracy and precision.
4. Apply the scientific rules of rounding and determining significant digits.
5. Convert numbers between decimal form and scientific notation.
6. Perform arithmetic operations on numbers in scientific notation.
7. Solve problems by translating english sentences into mathematical equations.
8. Solve literal equations for the indicated variable.
9. Define the types of fractions.
10. Convert between improper fractions and mixed numbers.
11. Add, subtract, multiply, and divide fractions with and *without* a calculator.
12. Solve applied problems with fractions by applying problem solving strategies and arithmetic skills.

**Unit 2**

1. Solve problems involving ratios, proportions, variations, and percents.
2. Utilize metric system prefix names and symbols.
3. Reduce units of measurement within systems.
4. Convert units of measurement from one system to another.

**Unit 3**

1. Simplify algebraic expressions using the laws of exponents.
2. Convert powers between exponential and radical form.
3. Simplify expressions by removing grouping symbols and combining like terms.
4. Add, subtract, and multiply algebraic expressions.
5. Divide polynomials by monomials.
6. Solve linear equations for one variable.

**Unit 4**

1. Graph points, lines, and curves on the rectangular coordinate system.
2. Find the slope and intercepts of a line.
3. Develop the equation for a line.
4. Find the approximate graphical solution to a system of two equations.
5. Solve a system of two equations and two unknowns using the addition-subtraction method and the substitution method.

**III. TOPICS:**

1. Review of Arithmetic
2. Scientific Notation and Significant Digits
3. Formula Rearrangement
4. Ratio and Proportion
5. Units of Measurement
6. Percentages
7. Exponents
8. Introduction to Algebra
9. Solving Simple Equations
10. Graphing
11. Linear Functions

**IV. REQUIRED RESOURCES/TEXTS/MATERIALS:**

1. *Pearson Custom: Pre-Health Mathematics*
2. Calculator: (Recommended) SHARP Scientific Calculator EL-531 (with fraction button “a b/c” as a primary function). *The use of some kinds of calculators, cell phones, and other electronic devices may be restricted during tests.*

**V. EVALUATION PROCESS/GRADING SYSTEM:**

Evaluation Methods:

Unit 1: Arithmetic, Significant Digits, and Formulas

**(no calculators allowed!)**

Quizzes (6 in total, 5% each) – 30%

Unit 2: Ratios, Proportions, Percents, and Unit Conversions

Quizzes (3 in total, 5% each) - 15%

Unit Test – 15%

Unit 3: Introduction to Algebra

Quizzes (3 in total) – 20%

Unit 4: Graphing and Linear Systems

Quizzes (4 in total, 5% each) – 20%

The following semester grades will be assigned to students:

<b>Grade</b>	<b><u>Definition</u></b>	<i>Grade Point Equivalent</i>
A+	90 – 100%	4.00
A	80 – 89%	3.00
B	70 - 79%	2.00
C	60 - 69%	1.00
D	50 – 59%	0.00
F (Fail)	49% and below	
CR (Credit)	Credit for diploma requirements has been awarded.	
S	Satisfactory achievement in field /clinical placement or non-graded subject area.	
U	Unsatisfactory achievement in field/clinical placement or non-graded subject area.	
X	A temporary grade limited to situations with extenuating circumstances giving a student additional time to complete the requirements for a course.	
NR	Grade not reported to Registrar's office.	
W	Student has withdrawn from the course without academic penalty.	

If a faculty member determines that a student is at risk of not being successful in their academic pursuits and has exhausted all strategies available to faculty, student contact information may be confidentially provided to Student Services in an effort to offer even more assistance with options for success. Any student wishing to restrict the sharing of such information should make their wishes known to the coordinator or faculty member.

## **VI. SPECIAL NOTES:**

### Attendance:

Sault College is committed to student success. There is a direct correlation between academic performance and class attendance; therefore, for the benefit of all its constituents, all students are encouraged to attend all of their scheduled learning and evaluation sessions. This implies arriving on time and remaining for the duration of the scheduled session.

## **VII. COURSE OUTLINE ADDENDUM:**

### 1. Course Outline Amendments:

The faculty member reserves the right to change the information contained in this course outline depending on the needs of the learner and the availability of resources.

### 2. Retention of Course Outlines:

It is the responsibility of the student to retain all course outlines for possible future use in acquiring advanced standing at other postsecondary institutions.

### 3. Prior Learning Assessment:

Students who wish to apply for advance credit transfer (advanced standing) should obtain an Application for Advance Credit from the program coordinator (or the course coordinator regarding a general education transfer request) or academic assistant. Students will be required to provide an unofficial transcript and course outline related to the course in question. Please refer to the Student Academic Calendar of Events for the deadline date by which application must be made for advance standing.

Credit for prior learning will also be given upon successful completion of a challenge exam or portfolio. Student Services, located in E1101, can provide information regarding the Prior Learning Assessment and Recognition policy or it can be viewed on the student portal.

Substitute course information is available in the Registrar's office.

4. Accessibility Services:  
If you are a student with a disability (e.g. physical limitations, visual impairments, hearing impairments, or learning disabilities), you are encouraged to discuss required accommodations with the Accessibility Services office. Visit Room E1101, call Extension 2703, or email [studentsupport@saultcollege.ca](mailto:studentsupport@saultcollege.ca) so that support services can be arranged for you.
5. Communication:  
The College considers ***Desire2Learn (D2L)*** as the primary channel of communication for each course. Regularly checking this software platform is critical as it will keep you directly connected with faculty and current course information. Success in this course may be directly related to your willingness to take advantage of this Learning Management System (LMS) communication tool.
6. Academic Dishonesty:  
Students should refer to the definition of “academic dishonesty” in *Student Code of Conduct*. Students who engage in academic dishonesty will be issued a sanction under the Student Code of Conduct which could lead to and include expulsion from the course/program. In order to protect students from inadvertent plagiarism, to protect the copyright of the material referenced, and to credit the author of the material, students must use a documentation format for referencing source material.
7. Tuition Default:  
Students who have defaulted on the payment of tuition (tuition has not been paid in full, payments were not deferred or payment plan not honoured) as of the first week of November (fall semester courses), first week of March (winter semester courses), or first week of June (summer semester courses), will be removed from placement and clinical activities due to liability issues. This may result in loss of mandatory hours or incomplete course work. Sault College will not be responsible for incomplete hours or outcomes that are not achieved or any other academic requirement not met as of the result of tuition default. Students are encouraged to communicate with Financial Services with regard to the status of their tuition prior to this deadline to ensure that their financial status does not interfere with academic progress.
8. Student Portal:  
The Sault College portal allows you to view all your student information in one place. **mysaultcollege** gives you personalized access to online resources seven days a week from your home or school computer. Single log-in access allows you to see your personal and financial information, timetable, grades, records of achievement, unofficial transcript, and outstanding obligations, in addition to announcements, news, academic calendar of events, class cancellations, your learning management system (LMS), and much more. Go to <https://my.saultcollege.ca>.

9. Audio and Video Recording Devices in the Classroom:

Students who wish to use recording devices in the classroom will seek permission of the faculty member before proceeding to record instruction. Students with disabilities who require audio or visual recording devices in the classroom as an accommodation will receive approval from their counsellor once the Audio and Video Recording Devices in the Classroom Policy has been reviewed by the student. Recorded classroom instruction will be used only for individual academic use and will not be used for any other purpose. Recordings may only be used for individual study of materials presented during class and may not be published or distributed. Intentional misuse of audio and video recordings or intentional misrepresentation when requesting the use of a device for recording shall constitute a violation of this policy and laws protecting intellectual property.