SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO

SAULT COLLEGE

COURSE OUTLINE

COURSE TITLE: Pre-Technology Math 1

CODE NO. : MTH160-3   **SEMESTER:** ONE

PROGRAM: Pre-Technology

AUTHOR: Mathematics Department

DATE:	August 2012	PREVIOUS OUTLINE DATED:	August 2011
APPROVED:		"Brian Punch"	June 13/12

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                    CHAIR   **DATE**

TOTAL CREDITS: 3

PREREQUISITE(S):

HOURS/WEEK: 3 hours per week

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I.   COURSE DESCRIPTION:

This first level mathematics course for the pre-technology program begins with a review of fundamental concepts including arithmetic operations and concepts in measurement, ratio, proportion, and percents. This is followed by an introduction to algebra and to graphing with a focus on linear relationships.

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 *with and without* a calculator.
2. Evaluate expressions following the order of operations.
3. Differentiate between exact and approximate numbers.
4. Apply the 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.

Unit 2
1. Define the types of fractions.
2. Convert between improper fractions and mixed numbers.
3. Convert between fractions and decimals.
4. Add, subtract, multiply, and divide fractions *with and without* a calculator.
5. Solve applied problems with fractions by applying problem solving strategies and arithmetic skills.

Unit 3
1. Solve problems involving ratios, proportions, 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 4
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. Solve linear equations for one variable.
6. Solve literal equations for the indicated variable.

Unit 5
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 approximate graphical solutions to a variety of problems.

III.   **TOPICS:**

1.	Review of Arithmetic	A.1-A.7; 1.1-1.3, 1.5
2.	Scientific Notation and Significant Digits	1.6
3.	Ratios and Proportions	4.5
4.	Percentages	A.8
5.	Units of Measurement	2.1-2.3
6.	Exponents	1.4; 10.1-10.2
7.	Introduction to Algebra	3.3-3.4
8.	Solving Equations	4.1-4.2
9.	Graphing	5.2-5.4; 5.6

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

1. Washington, A. J., Triola, M.F., & Reda, E. E. (2008). *Introduction to Technical Mathematics with Math XL Student Access Kit,* 5th ed. Toronto: Pearson Addison Wesley

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.*

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V.   EVALUATION PROCESS/GRADING SYSTEM:

Evaluation Methods:

Unit 1: Arithmetic, Significant Digits, Scientific Notation
   Homework - 4%
   Unit Test - 16%

Unit 2: Fractions
   Homework 4%
   Unit Test - 16%

Unit 3: Ratios, Proportions, Percents, Unit Conversions
   Homework – 4%
   Unit Test - 16%

Unit 4: Introduction to Algebra
   Homework – 4%
   Unit Test - 16%

Unit 5: Graphing and Linear Equations
   Homework – 4%
   Unit Test - 16%

Special Note:
- **There will be a 10% deduction for every homework assignment handed in late.   This includes lateness due to absence from class.**

The following semester grades will be assigned to students:

Grade	Definition	*Grade Point Equivalent*
A+	90 – 100%	4.00
A	80 – 89%	
B	70 - 79%	3.00
C	60 - 69%	2.00
D	50 – 59%	1.00
F (Fail)	49% and below	0.00

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.

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:

The provisions contained in the addendum located on the portal form part of this course outline.