## SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

## SAULT STE. MARIE, ONTARIO

Sault College

# COURSE OUTLINE

**COURSE TITLE:** Math Level 5

**CODE NO. :** MTH050 **SEMESTER:** n/a

**PROGRAM:** Academic Upgrading

**AUTHOR:** Doug Cressman

**DATE:** May, 2006 **PREVIOUS OUTLINE DATED:** n/a

**APPROVED:**

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**DEAN** **DATE**

**TOTAL CREDITS:** n/a

**PREREQUISITE(S):** LBS 4 or Placement Test

**HOURS/WEEK:** 5

**I. COURSE DESCRIPTION:** A self-directed course in which the learner, under direct supervision of the professor, reviews basic mathematical skills including ratio and percent, integers and rational numbers, variables and polynomials, solving and graphing linear and non-linear equations, geometry and statistics. Although not assumed, it is entirely possible to complete the requirements for this course in one semester.

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

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

1. Consolidate various numerical skills, and manipulate first-degree polynomials
   Potential Elements of the Performance:
   - Solve mathematical problems involving ratio and percent
   - Use estimation to ensure an answer is reasonable
   - Solve mathematical problems involving integers, rational numbers, exponents and powers
   - Add and subtract algebraic expressions
   - Add, subtract and multiply polynomials
2. Solve and graph linear equations
   Potential Elements of the Performance:
   - Solve equations and verify solutions
   - Find the slope of a line
   - Interpret graphs and plot coordinates on a Cartesian plane
   - Graph a linear equation using a table of values, and/or *x* and *y* intercepts, and/or slope and *y* –intercept methods.
3. Graph linear and non-linear relationships
   Potential Elements of the Performance:
   - Create a scatter plot and line of best fit
   - Make a table of values and graph a non-linear relationship
   - Recognize linear and non-linear relationships based on table of values and finite differences, or on equations
   - Apply mathematical modelling to analyze existing information and predict future results using table of values and linear or non-linear graphs
4. Find the perimeter of various shapes using combinations of known formulas
   Potential Elements of the Performance:
   - Use the Pythagorean Theorem to calculate the length of an unknown side in a right triangle, and to solve problems
   - Find the perimeter of simple shapes and composite diagrams using combinations of formulas

5. Generate basic statistical data and interpret graphs
   Potential Elements of the Performance:
   - Implement random and unbiased sampling techniques
   - Calculate mean, median and mode
   - Interpret and create line and bar graphs, and pie charts
6. Calculate and express probabilities, and describe results
   Potential Elements of the Performance:
   - Express the probability of a simple event as a fraction, decimal or percent
   - Interpret probabilities expressed as fractions, decimals or percents
   - Apply principles of probability to simple experiments

## III. TOPICS:

1. Ratio and Percent
2. Integers and Rational Numbers
3. Exponents and Powers
4. Variables and Polynomials
5. Linear and Non-linear equations and graphs
6. Perimeter
7. Statistics and probability

## IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

Independent Learning Centre. Mathematics MFM2P-B Lessons 1-5, 6-10, 16-19, and MEL4E Lessons 1-4

## V. EVALUATION PROCESS/GRADING SYSTEM:

At the completion of each unit, a unit test is given. The test must be passed at a minimum of 60%. The final mark is calculated as an average of the unit test marks. The following semester grades will be assigned to students:

*As modified from the post-secondary programs.*

| Grade | Definition |
|---|---|
| A+ | 90 – 100% |
| A | 80 – 89% |
| B | 70 - 79% |
| C | 60 - 69% |
| F | 59% and below |
| W | Student has withdrawn from the course without academic penalty. |

## VI. SPECIAL NOTES:

Special Needs:
If you are a student with special needs (e.g. physical limitations, visual impairments, hearing impairments, or learning disabilities), you are encouraged to discuss required accommodations with your professor and/or the Special Needs office. Visit Room E1101 or call Extension 2703 so that support services can be arranged for you.

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.

Course Outline Amendments:
The professor reserves the right to change the information contained in this course outline depending on the needs of the learner and the availability of resources.

Exemption from Topics:
Depending on evidence of prior learning, and at the discretion of the professor, credit may be given for any of the units of this level.

## VII. PRIOR LEARNING ASSESSMENT:

Students who wish to apply for advanced credit in the course should consult the professor. Credit for prior learning will be given upon demonstrating proof of same and at the discretion of the professor.