

SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO



COURSE OUTLINE

COURSE TITLE:	Mathematics		
CODE NO. :	MTH153-3	SEMESTER:	2
PROGRAM:	Truck and Coach / Heavy Equipment Technician		
AUTHOR:	The Mathematics Department		
DATE:	January 2009	PREVIOUS OUTLINE DATED:	January 2008
APPROVED:	“B. Punch”		
	_____		_____
	CHAIR		DATE
TOTAL CREDITS:	3		
PREREQUISITE(S):	None		
HOURS/WEEK:	3		

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 For additional information, please contact *B. Punch, Chair*
Natural Environment/Outdoor Studies & Technology Programs
 (705) 759-2554, Ext. 2681

I. COURSE DESCRIPTION:

This course includes a review of arithmetic and fundamental algebraic processes. Topics include percent and percentages, conversion of units, ratio and proportion, exponents, powers and roots, and formula applications.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

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

1. Apply whole number, fractional and decimal operations with and without the use of a calculator.

This learning outcome will comprise approximately **20%** of the course.

Elements of the performance:

- understand the decimal number system
- add, subtract, multiply and divide whole numbers
- understand and apply the mathematical order of operations
- read and write decimal numbers
- round decimal numbers
- add, subtract, multiply and divide decimal numbers
- determine equivalent fractions
- determine common denominators
- add, subtract, multiply and divide fractional numbers
- convert fractions to decimals

2. Apply roots and exponents of whole numbers, fractions and decimals using a calculator.

This learning outcome will comprise approximately **5%** of the course.

Elements of the performance:

- calculate the root of whole numbers
- calculate the exponent of whole numbers
- calculate the root of fractional numbers
- calculate the exponent of fractional numbers
- calculate the root of decimal numbers
- calculate the exponent of decimal numbers
- simplify arithmetic and algebraic exponential expressions

3. Apply whole number, fractional, and decimal equivalents to percent and vice-versa.

This learning outcome will comprise approximately **12%** of the course.

Elements of the performance:

- convert whole numbers to percentages
- convert decimal numbers to percentages
- convert fractional numbers to percentages
- evaluate the percentage of a number and be able to evaluate percent increase and decrease

4. Apply ratios and proportions to problem solving.

This learning outcome will comprise approximately **13%** of the course.

Elements of the performance:

- calculate equivalent ratios
- determine proportions based on ratios
- calculate the nearest fractional part based on a decimal value

5. Convert between Imperial, Metric and the U.S. System of measurement using dimensional analysis.

This learning outcome will comprise approximately **25%** of the course.

Elements of the performance:

- understand the Imperial, Metric and U.S. System of measurements
- understand metric prefixes
- convert units using ratios
- convert units using tables
- perform temperature conversions

6. Solve practical problems using equations.

This learning outcome will comprise approximately **25%** of the course.

Elements of the performance:

- solve simple linear equations by applying inverses
- solve simple linear equations by isolating variables
- solve simple linear equations by substituting
- solve simple fractional equations
- re-arrange and evaluate formulas

III. TOPICS:

1. Whole numbers, fractions, and decimals.
2. Exponents and roots.
3. Percentages.
4. Ratio and proportion.
5. Metric, Imperial and the U.S. system of measurement.
6. Formulas and equations.

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

1. Calculator: (Recommended) SHARP Calculator EL-531W.
The use of some kinds of calculators and other devices may be restricted during tests.

V. EVALUATION PROCESS/GRADING SYSTEM:

Topic	Tests	Assignments	Total
1 and 2	20%	5%	25%
3 and 4	20%	5%	25%
5	20%	5%	25%
6	<u>20 %</u>	<u>5%</u>	<u>25%</u>
	80%	20%	100%

The following semester grades will be assigned to students:

<u>Grade</u>	<u>Definition</u>	<u>Grade Point Equivalent</u>
A+	90 – 100%	4.00
A	80 – 89.9%	
B	70 – 79.9%	3.00
C	60 – 69.9%	2.00
D	50 – 59.9%	1.00
F (Fail)	Below 50%	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:

Disability Services:

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.

Communication:

The College considers **WebCT/LMS** 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 the **Learning Management System** communication tool.

The professor reserves the right to use other tools and / or techniques that may be more applicable. These other tools and / or techniques for effective communication will be discussed, identified and presented throughout the delivery of the course content.

Plagiarism:

Students should refer to the definition of “academic dishonesty” in *Student Code of Conduct*. Students who engage in academic dishonesty will receive an automatic failure for that submission and/or such other penalty, up to and including expulsion from the course/program, as may be decided by the professor/dean. In order to protect students from inadvertent plagiarism, to protect the copyright of the material referenced, and to credit the author of the material, it is the policy of the department to employ a documentation format for referencing source material.

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.

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

Other Pertinent Information

1. In order to pass this course the student must obtain an overall test average of **50%** or better, as well as, an overall assignment average of **50%** or better. A student who is not present to write a particular test, and does not notify the professor beforehand of their intended absence, may be subject to a zero grade on that test.
2. There will be **no** supplemental or make-up tests in this course.
3. Assignments must be submitted by the due date according to the specifications of the professor. Late assignments will normally be given a mark of zero. Late assignments will only be marked at the discretion of the professor in cases where there were extenuating circumstances.
4. Any assignment submissions, deemed to be copied, will result in a **zero** grade being assigned to **all** students involved in that particular incident.

VII. 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.

Credit for prior learning will also be given upon successful completion of a challenge exam or portfolio.