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 2010** **PREVIOUS OUTLINE DATED:** **January 2009**
APPROVED:	**"B. Punch"**

_____ _____
CHAIR   DATE

TOTAL CREDITS:	3
PREREQUISITE(S):	None
HOURS/WEEK:	3

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. (text: sections 1, 2 and 3)

This learning outcome will comprise approximately **15%** 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. (text: sections 1, 2 and 3)

This learning outcome will comprise approximately **15%** 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. (text: section 4)

    This learning outcome will comprise approximately **15%** 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. (text: section 6)

    This learning outcome will comprise approximately **15%** 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. (text: section 5)

    This learning outcome will comprise approximately **20%** 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. (text: section 7)

This learning outcome will comprise approximately **20%** 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:

Texts: <u>Practical Problems in Mathematics for Automotive Technicians</u>
7th edition, by Todd Sformo
Delmar Cengage Learning
ISBN: 978-1-4283-3524-0

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:

Evaluation Methods	Weight
Quizzes	20%
Tests	60%
Assignments	20%
	100%

The following semester grades will be assigned to students in postsecondary courses:

Grade	Definition	Grade Point Equivalent
A+	90 – 100%	4.00
A	80 – 89.9%	4.00
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.   <u>OTHER EVALUATION CONSIDERATIONS</u>

1.   In order to pass this course the student must obtain an overall test/quiz 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/quiz, and does not notify the professor beforehand of their intended absence, may be subject to a zero grade on that test/quiz.

2.   There will be **no** supplemental or make-up quizzes/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/projects submissions, deemed to be copied, will result in a **zero** grade being assigned to **all** students involved in that particular incident.

5.   It is the responsibility of the student to ask the professor to clarify any assignment requirements.

6.   The professor reserves the right to modify the assessment process to meet any changing needs of the class.

VII.   SPECIAL NOTES:

<u>Course Outline Amendments</u>:
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.

<u>Retention of Course Outlines</u>:
It is the responsibility of the student to retain all course outlines for possible future use in acquiring advanced standing at other postsecondary institutions.

<u>Prior Learning Assessment</u>**:**
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.

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

<u>Disability Services</u>:
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 your professor and/or the Disability Services office. Visit Room E1101 or call Extension 2703 so that support services can be arranged for you.

<u>Communication:</u>
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.

<u>Plagiarism</u>:
Students should refer to the definition of "academic dishonesty" in *Student Code of Conduct*. A professor/instructor may assign a sanction as defined below, or make recommendations to the Academic Chair for disposition of the matter. The professor/instructor may (i) issue a verbal reprimand, (ii) make an assignment of a lower grade with explanation, (iii) require additional academic assignments and issue a lower grade upon completion to the maximum grade "C", (iv) make an automatic assignment of a failing grade, (v) recommend to the Chair dismissal from the course with the assignment of a failing grade. 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.

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. Announcements, news, the academic calendar of events, class cancellations, your learning management system (LMS), and much more are also accessible through the student portal. Go to https://my.saultcollege.ca.

Electronic Devices in the Classroom:
Students who wish to use electronic devices in the classroom will seek permission of the faculty member before proceeding to record instruction. With the exception of issues related to accommodations of disability, the decision to approve or refuse the request is the responsibility of the faculty member. Recorded classroom instruction will be used only for personal use and will not be used for any other purpose. Recorded classroom instruction will be destroyed at the end of the course. To ensure this, the student is required to return all copies of recorded material to the faculty member by the last day of class in the semester. Where the use of an electronic device has been approved, the student agrees that materials recorded are for his/her use only, are not for distribution, and are the sole property of the College.

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. *It is the departmental policy that once the classroom door has been closed, the learning process has begun. Late arrivers may not be granted admission to the room.*

Absences due to medical or other unavoidable circumstances should be discussed with the professor, otherwise a penalty may be assessed. The penalty depends on course hours and will be applied as follows:

Course Hours	Deduction
5 hrs/week (75 hrs)	1.0% /hr
4 hrs/week (60 hrs)	1.5% /hr
3 hrs/week (45 hrs)	2.0% /hr
2 hrs/week (30 hrs)	3.0% /hr

Absentee reports will be discussed with each student. Final penalties will be reviewed and assessed at the discretion of the professor.