SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO

SAULT COLLEGE

COURSE OUTLINE

COURSE TITLE: Mathematics

CODE NO. :   MTH 612-4   **SEMESTER:**   One

PROGRAM: Aviation Technology

AUTHOR: Math Department

DATE: June 2011   **PREVIOUS OUTLINE DATED:**   May 2010

APPROVED:

"B.Punch"

_____   _____
                CHAIR   **DATE**

TOTAL CREDITS: 4

PREREQUISITE(S):   None

HOURS/WEEK: 4

I.   COURSE DESCRIPTION:
Students will develop skills needed to solve problems in technical mathematics. Topics include a detailed review of algebra followed by a study of quadratic equations, exponential and logarithmic functions, and trigonometric functions.

II.   LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

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

1.
- distinguish a function from other mathematical objects
- graph some types of functions

2.
- work with angles in degree mode using basic conventions
- use trigonometry to solve problems involving right angles or first quadrant angles

3.
- solve systems of equations in two or three unknowns using algebraic techniques

4.
- Factor difference of squares, trinomials, sum and difference of cubes, by grouping
- Add, subtract ,multiply and divide algebraic fractions
- Solve fractional equations

5.
- Graph quadratic functions
- Solve quadratics using the quadratic formula, by factoring and by completing the square

6.
- use trigonometry to solve problems involving angles in any quadrant
- Convert degrees to radians and vice-versa
- solve problems involving angles in radian measure

7.
- Solve problems involving vectors
- use the sine law and cosine law
- Convert from exponential form to log form and vice-versa
- Solve exponential and logarithmic equations.
- Graph exponential and logarithmic functions

8.   • graph trig functions

9.   • simplify expressions with integral and fractional exponents
           • put expressions in simplest radical form
           • add, subtract, multiply and divide radical expressions

10.   • use properties of logarithms to manipulate logarithmic
                  functions
           • solve logarithmic and exponential equations

11.   • recognize equation forms of circles, parabolas, ellipses, and
                  hyperbolas
           • solve systems of equations of mixed degree

12.   • solve problems involving linear and non-linear inequalities,
                  including problems involving absolute values

13.   • use the concept of variation to solve ratio and proportion
                  problems

III.   TOPICS:

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

1. Basic Technical Mathematics with Calculus, 9th Edition, Metric(SI) Version, Washington. Addison-Wesley, 2005

2. Calculator: *(Recommended)* SHARP Scientific Calculator EL-531. *The use of some kinds of calculators, cell phones, and other electronic devices may be restricted during tests.*

V. EVALUATION PROCESS/GRADING SYSTEM:

The instructor will provide you with a list of test dates. **Tests may be scheduled out of regular class time.**

Unexcused absence from a test may result in a mark of zero ("0"). Absence may be excused on compassionate grounds such as verified illness or bereavement. On return from an excused absence, you should ask your instructor to schedule the writing of a make-up test. Failure to do so will be considered as an unexcused absence.

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.

"F" and "X" Grades at the end of the Semester

If an "X" grade is not cleared by the specified date, it will become an "F" grade. Except for extenuating circumstances, an "X" grade in Math will not be carried into the next semester.

Course: MTH 612		
Evaluation Device	**Topics Covered** (reference topic numbers from the course outline)	**% weight of Final Average**
Test 1	1, 3, 4, 5	25%
Test 2	2, 6, 7, 8	25%
Test 3	9, 10	25%
Test 4	11, 12, 13	25%

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.