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: May 2008   **PREVIOUS OUTLINE DATED:**   May 2007

APPROVED:

"Brian Punch"

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                         CHAIR   **DATE**

TOTAL CREDITS: 4

PREREQUISITE(S):   None

HOURS/WEEK: 4

I. COURSE DESCRIPTION:

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, 8th Edition, Metric 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:

MAJOR ASSIGNMENTS AND TESTS
While regular tests will normally be scheduled and announced beforehand, there may be an unannounced test on current work at any time. Such tests, at the discretion of the instructor, may be used for up to **30%** of the overall mark.

At the discretion of the instructor, there may be a mid-term exam and there may be a final exam, each of which can contribute up to **30%** of the overall mark.

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

ATTENDANCE
It is your responsibility to attend all classes during the semester. Research indicates there is a high correlation between attendance and student success.

If you are absent from class, it is your responsibility to find out what work was covered and assigned and to complete this work before the next class. Your absence indicates your acceptance of this responsibility.

 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.

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.

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.

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.

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.