

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 2007 **PREVIOUS OUTLINE DATED:** May 2006
APPROVED:

		_____	_____
		DEAN	DATE
TOTAL CREDITS:	4		
PREREQUISITE(S):	None		
HOURS/WEEK:	4		

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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:

1. Functions ----- Chapter 3
2. Trigonometric Functions -----Chapter 4
3. System of Linear Equations -----Chapter 5
4. Factoring and Fractions-----Chapter 6
5. Quadratic Equations-----Chapter 7
6. Trig Functions of any Angle-----Chapter 8
7. Vectors and Oblique Triangles-----Chapter 9
8. Graphs of the Trig Functions-----Chapter 10
9. Exponents and Radicals-----Chapter 11
10. Exponential and Logarithmic Functions-----Chapter 13
11. Additional Types of Systems of Equations-----Chapter 14
12. Inequalities-----Chapter 17
13. Variation-----Chapter 18

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:

Four term tests, each counting for 25%

The following semester grades will be assigned to students:

Grade	<u>Definition</u>	<i>Grade Point Equivalent</i>
A+	90 – 100%	4.00
A	80 – 89%	3.00
B	70 - 79%	2.00
C	60 - 69%	1.00
D	50 – 59%	0.00
F (Fail)	49% and below	
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 advanced credit in the course should consult the professor. Credit for prior learning will be given upon successful completion of a challenge exam or portfolio.

VIII. DIRECT CREDIT TRANSFERS:

Students who wish to apply for direct credit transfer (advanced standing) should obtain a direct credit transfer form from the Dean's secretary. Students will be required to provide a transcript and course outline related to the course in question.