SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

COURSE TITLE:	Mathematics		
CODE NO. :	MTH 612	**SEMESTER:**	One
PROGRAM:	Aviation Technology		
AUTHOR:	Math Department		
DATE:	June 2013	**PREVIOUS OUTLINE DATED:**	May 2012
APPROVED:	"Colin Kirkwood"		Sept/13

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Dean **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

14. • use complex numbers in various forms

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
14. Complex Numbers----------Chapter 12

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

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

2. Calculator: any scientific calculator. *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 will 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 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.

2. 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.

3. 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. 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.

4. Accessibility Services:
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 Accessibility Services office. Visit Room E1101 or call Extension 2703 so that support services can be arranged for you.

5. Communication:
The College considers Desire2Learn (D2L) 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 this Learning Management System (LMS) communication tool.

6. 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.

7. Tuition Default:

Students who have defaulted on the payment of tuition (tuition has not been paid in full, payments were not deferred or payment plan not honoured) as of the first week of <choose November, March, or June> will be removed from placement and clinical activities due to liability issues. This may result in loss of mandatory hours or incomplete course work. Sault College will not be responsible for incomplete hours or outcomes that are not achieved or any other academic requirement not met as of the result of tuition default. Students are encouraged to communicate with Financial Services with regard to the status of their tuition prior to this deadline to ensure that their financial status does not interfere with academic progress.

8. 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, in addition to announcements, news, academic calendar of events, class cancellations, your learning management system (LMS), and much more. Go to https://my.saultcollege.ca.

9. 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.