

SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO



COURSE OUTLINE

COURSE TITLE: Pre-Technology Math II
CODE NO. : MTH161 **SEMESTER:** 10W
PROGRAM: Pre-Technology
AUTHOR: Mathematics Department
DATE: Jan 2010 **PREVIOUS OUTLINE DATED:** Jan 2009
APPROVED: "B. Punch"

CHAIR

DATE

TOTAL CREDITS: 3
PREREQUISITE(S): MTH160
HOURS/WEEK: 3 hours per week

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I. COURSE DESCRIPTION:

This course is a continuation of MTH160-3 (from Semester One) for pre-technology students. Topics of study include: quadratic, exponential and logarithmic equations; geometry, and trigonometric functions. A treatment of trigonometry of right and oblique triangles with applications is included. This course also includes an introduction to statistics.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

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

1. Solve quadratic equations by factoring, using quadratic formula, and graphically.

Potential Elements of the Performance:

- Reviewing the quadratic equation
- Solving Quadratic Equations by Factoring
- Completing the Square
- Solving Quadratic Equations Using the Quadratic Formula
- Graphing the Quadratic Function

2. Solve exponential and logarithmic equations.

Potential Elements of the Performance:

- Recognizing an exponential equation
- Identify the base in an exponential equation
- Evaluate and graph exponential functions
- Review Logarithms and Natural Logarithms
- Solve exponential and logarithm equations

3. Solve problems involving perimeter, area, volume, surface area, for simple, composite shapes and figures.

Potential Elements of the Performance:

- Discuss shapes
 - Review the rules on area, perimeter, volume, surface area for simple composite shapes and figures
 - Solve for perimeter, area, volume, and surface area for the various composite shapes and figures
 - Introduce geometry and right angle triangle trigonometry.
4. Solve problems using primary trigonometric ratios, the sine law, and the cosine law.

Potential Elements of the Performance:

- Evaluate angles and their measure
 - Evaluate other geometric figures
 - Solve for right angle applications and use the Pythagorean Theorem
 - Discuss similar triangles and the trigonometric ratios
 - Determine the values and applications of trigonometric ratios
 - Review the law of Sines and the law of Cosines
 - Introduce Vectors, vector components, vector addition and their application.
5. Interpret, analyze and summarize two variable data graphically and numerically using a variety of tools and strategies.

Potential Elements of the Performance:

- Introduction to Data Analysis
- Create various representations of data graphically
- Measure central tendencies, spread and variation
- Introduce probability and its applications

III. TOPICS:

	Approximate Time
1. Quadratic Equations	8 hours
2. Exponential and Logarithmic Functions	8 hours
3. Geometry	8 hours
4. Right Triangle Trigonometry	6 hours
5. Oblique Triangle Trigonometry	7 hours
6. Introduction to Data Analysis	8 hours

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

1. Washington, A. J., Triola, M.F., Reda, E. E. (2008). Introduction to Technical Mathematics (5th ed.). Toronto: Pearson Addison Wesley. ISBN-13: 978-0-321-37418-9
2. Calculator: SHARP Scientific Calculator EL-520 WB - BK.
(Recommended)
3. The use of some kinds of calculators, cell phones, and other electronic devices will be restricted during tests.

V. EVALUATION PROCESS/GRADING SYSTEM:

Assigned work and/or Quizzes	20%
Tests	80%

Some minor modifications to the above percentages may be necessary. The professor reserves the right to adjust the number of tests, practice tests, quizzes and assigned work based on unforeseen circumstances. The students will be given sufficient notice to any changes and the reasons thereof.

The Plan:

There will likely be four or more tests of equal value.

If warranted, the professor may choose to also include surprise quizzes, class based work and/or practice tests to reinforce key concepts.

MathXL assignments /written assignments may be included, and can contribute toward your final mark in the course. **In order to pass the course, students must achieve a passing average on all of the tests.** Each and every test is mandatory and an absence from a test without prior approval may result in a zero grade for that test. If the professor chooses to have in class quizzes and / or class based work, absence may also result in zero grades for these activities.

The following semester grades will be assigned to students:

<u>Grade</u>	<u>Definition</u>	<u>Grade Point Equivalent</u>
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:

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.

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.

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.

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

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.

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.

Plagiarism:

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.

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 March will be removed from placement and clinical activities. 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.