

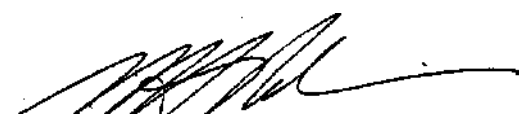
SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY  
SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

Course Title: INTRODUCTORY MATHEMATICS  
Code No>: MTH 155-4  
Program: PULP AND PAPERMAKING OPERATIONS  
Semester: SEMESTER I  
Date: MARCH 1989  
Author: ADAM SUGDEN

New: X Revision:

APPROVED

  
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CALENDAR DESCRIPTION

INTRO MATHEMATICS

MTH 155-4

COURSE NAME

COURSE NUMBER

PHILOSOPHY/GOALS

This course deals with the mathematical fundamentals required for understanding the technologies used in pulp and paper manufacture. The course will build on skills learned in high school and will continue to a point where the student will be competent to carry out the various calculations needed for other courses in this program.

Mathematical fundamentals to be covered will include addition, subtraction, multiplication, division, fractions, decimals, powers, roots and solving for unknowns. Aspects of geometry, particularly the calculation of area and volume, will be reviewed. The preparation and analysis of graphs, unit conversions and practical problems will be dealt with. Basic statistics will be introduced and will include mean, median, standard deviation and linear correlation.

**METHOD OF ASSESSMENT:**

Students will be graded on the basis of their performance in four tests given at appropriate intervals during the semester.

Letter grades will be assigned according to the standard Sault College system. Students having a final overall cumulative percentage between 50 and 59% may be permitted to write a supplemental examination that will cover the material from the entire course.

TEXTBOOK(S);

There has been no textbook assigned for this course at this time. However, there are several useful texts that could be used that will cover most of the aspects of the course.

OBJECTIVES;

The overall academic objective of this course is that the student will be able to demonstrate mastery of mathematical skills that are relevant to pulp and paper manufacture. The specific objectives to be met are as follows:

1. Demonstrate required ability to perform basic mathematical operations such as addition, subtraction, multiplication and division.
2. Demonstrate ability to compute fractions and decimal equivalents of fractions.
3. Demonstrate the use of fractions and decimals in basic mathematical operations of addition, subtraction, multiplication and division.
4. Demonstrate ability to use powers and roots of numbers in mathematical calculations.
5. Demonstrate the ability to solve for unknowns in simple mathematical expressions.
6. Demonstrate abilities in determining area and volume of both regular and irregular surfaces.
7. To be able to prepare and analyze graphs, specifically, bar charts, line charts and scatter diagrams and to fit a trend line to data points.
8. Demonstrate abilities in the calculation and use of mean, median, standard deviation and descriptive statistics.
9. Demonstrate ability to calculate simple linear equations and their correlation coefficients.

**NATURE OF PRESENTATION:**

The course will be given for 4 hours per week using four single periods. It will be in a lecture format with examples worked out in class. Work to be completed outside of class hours will be regularly assigned.

**TOPICS COVERED;**

**WEEK**

**TOPIC**

- Introduction to course, the topics to be covered
- Why mathematics is required for pulp and paper
- Review of math competence

- Basic math skills
- Addition, subtraction, multiplication, division

•Fractions

Decimals

Basic math skills using fractions and decimals

4,

- Test 1
- Powers of numbers
- Roots of numbers

- Basic algebra
- Solving for one unknown
- Solving for two unknowns

- Calculation of areas of planes
- Calculation of areas of solids

- Calculation of volumes of symmetrical solids
- Calculation of volumes of non-symmetrical solids

8,

- Practical problems in areas and volumes

9.

- Graphical presentation of information
- Interpretation of graphs
- False information from graphs

<b>WEEK</b>	<b>TOPIC</b>
10»	-Conversions of units -Imperial to metric -Other conversions and some practical problems
11.	-Test 2 -Basic statistics: what they mean -Measures of "average"
12,	-Mean, median, mode -Standard deviation
13.	-Interpreting standard deviation -Simple linear equations
14.	-"Goodness of fit" of equation to data points -Introduction to Statistical Process Control (SPC)
15.	-Industrial application of S.P.C -Test 3

