

SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY

SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

Course Title MATHEMATICS
Code No.: MTH 554-4
Program MECHANICAL TECHNOLOGY
Semester: III
Date: OCTOBER, 1985
Author J. SUFADY

New

Revision

APPROVED


Chairperson

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CALENDAR DESCRIPTION

MATHEMATICS

MTH 554-4

COURSE NAME

COURSE NUMBER

PHILOSOPHY/GOALS;

Students studying mathematics at this level are those individuals where a certain degree of originality, a sense of logic and an ability to learn independently are required of them in their major subject area. This course serves to exercise these three requirements and to also give them a theoretical knowledge for their academic subjects.

OBJECTIVES;

The basic objective is for the student to develop an understanding of the methods studied, knowledge of the facts presented and an ability to use these in the solution of problems. For this purpose exercises are assigned- Test will reflect the sort of work contained in other assignments. The level of competency demand is the level required to obtain an overall passing average in the tests. The material to be covered is listed on the following page.

METHOD OF ASSESSMENT (GRADING METHOD):

1. Three - four tests per semester.
2. Final Grade is a weighted average of these tests.
3. A failing grade at the end of the semester can be upgraded by writing a two-hour comprehensive examination.

TEXTBOOK(S):

Washington, Allan, J., Technical Calculus With Analytic Geometry.

TOPIC NUMBER	PERIODS	TOPIC DESCRIPTION	REFERENC
		<u>Introduction to Differential Calculus</u>	
		Functional notation	Washingt
		Limiting value of a function	pp. 45-6
		Differentiation-delta method	
		Practical applications- rectiline motion	
12		<u>Differentiation by Rule</u>	
		Differentiation formulas	Washingt
		Composite function and the chain rule	pp. 64-8
		Implicit differentiation	
		Electrical applications	
		Successive differentiation	
10		<u>Practical Application of Differentiation</u>	
		Gradients	Washingt
		Tangents to curves	pp. 85-1
		Maxima and minima	
		(Aviation should finish the semester here)	
		Related rate problems	
		<u>Differential and Integral</u>	
		(For Mechanical, give more application time)	Washingt
		Differential formulas	pp. 113-
		Applications of differential	
		Integration as anti-differentiation	
		Applications of indefinite integration	
		<u>Definite Integration</u>	
		Areas under a curve	Washingt
		Fundamental theorem of integral calculus	pp. 128-
		Computations with definite integrals	
		Application to areas, volume, motion	
		electrical problems	

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