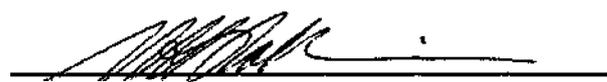SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY

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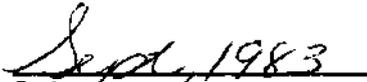
COURSE OUTLINE

Course Title: MATHEMATICS   (T^(L VAK)\(H^ *U)*

Code No.:   MTH 654-4

Program: AVIATION

Semester: III

Date: JUNE 1983

Author: W. MacQuarrie[1]

New: Revision;   X

APPROVED   _____   _____
            Chairperson   Date

MATHEMATICS   MTH 654-4
Course Name   Course Number

PHILOSOPHY/GOALS:

When the student has successfully completed this course he/she will have
demonstrated an acceptable ability to pass tests based upon the course
contents as listed elsewhere. If, after competing the course, the student
takes further courses (or employment) in which he/she is required to apply
this material he should then, through practice, be able to develop a good
command of this subject matter.

METHOD OF ASSESSMENT (GRADING METHOD):

The students will be assessed by tests. These tests will include periodic
tests based upon blocks of subject matter and may, at the instructors dis-
cretion include unannounced surprise tests on current work and/or a final
test on the whole course. A letter grade will be based upon a student's
weighted average of his/her test results.   See also the mathematic's
department annual publication "TO THE MATHEMATICS STUDENT" for further
details. This publication is made available to the students early in each
academic year.

TEXTBOOK(S):

TECHNICAL CALCULUS WITH ANALYTIC GEOMETRY; A.J. Washington
- Benjamin Cummings

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. Tests will reflect the sort of work contained in the assignments
The level of competency demanded is the level required to obtain an overall
passing average on the tests. The material to be covered is listed on the
following pages.

AVIATION MATHEMATICS - MTH 654-4

TOPIC NO.	PERIODS	TOPICS	REFERENCES
		Empirical Equations (Aviation Only)	Rice and Knight 2nd Ed.
		Linear empirical equations	
		Non-Linear empirical equiations	Ch. 6 - p. 334-352
		Interpolation (Aviation only) (tabulated performance charts)	any 4 pi ACE log and trig table
		Review basic interpolation trends in tabulated data (4 place logarithm and natural trig tables)	
		Use of Aviation CR-3 type computers in interpolation (proportions)	
		Multiple interpolation procedures	Cessna 172M Cessna 180 Cessna 182
		Practical problems in assorted performance tables (take-off landing, climb and cruise performance charts)	
		Graphical (Performance Charts) (Aviation only)	Cessna 172M Piper Twin Commanche
		Reading graphical charts	
		Normal critical path through multiple graph charts	
		Reverse path through multi-graph charts given conditions	
		Practical problems	
	12	Derivatives of the Exponential and Logarithmic Functions	251-268 Ch. 7
		Exponential and Logarithmic functions	
		Derivative of logarithmic functions	
		Derivative of exponential functions	
	25	Methods of Integration	269-3&1
		Power Formula	
		Basic logarithmic form	
		The exponential form	
		Various trigonometric forms	
		Integration by parts	
		Integration by Trig substitution	
		Integration by use of tables	

AVIATION MATHEMATICS - MTH 654-4

TOPIC NO.	PERIODS	TOPICS	REFERENCES

Graph Preparation (Aviation only)

		Procedures for making engineering graphs	Cessna 172M
		Selection of axis, names, labeHling techniques	
		Multiline graphs from tabulated performance charts	Piper Twin Commanche
		Interpolation in multiline graphs	
		Winds aloft graph on CR-3 computer	
		Practical assignmentsn	

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