

CALENDAR DESCRIPTION

MATHEMATICS
Course Name

MTH 554
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. Tests will reflect the sort of work contained in other assignments. The level of competency demanded 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.

<u>Topic Number</u>	<u>Periods</u>	<u>Topic Description</u>	<u>Reference</u>
1	7	<u>Introduction to Differential Calculus</u> Functional notation Limiting value of a function Differentiation-delta method Practical applications-rectiline motion	Washington pp. 45-64
	12	<u>Differentiation by Rule</u> Differentiation formulas Composite function and the chain rule Implicit differentiation Electrical applications Successive differentiation	Washington pp, 64-84
	10	<u>Practical Application of Differentiation</u> Gradients Tangents to curves Maxima and minima (Aviation should finish the semester here) Related rate problems	Washington pp. 85-112
	5	<u>Differential and Integral</u> (For Mechanical, give more application time) Differential formulas Applications of differential Integration as anti-differentiation Applications of indefinite integration	Washington pp. 113-127
	9	<u>Definite Integration</u> Areas under a curve Fundamental theorem of integral calculus Computations with definite integrals Application to areas, volume, motion electrical problems	Washington pp. 128-153