

MATHEMATICS

MTH551-4

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COURSE NAME

COURSE NUMBER

TOTAL CREDIT HOURS: 6 4

PREREQUISITE(S): MTH426

I. PHILOSOPHY/GOALS:

This introductory course in calculus contains a topic on analytic geometry of the straight line and conic sections, the derivative of algebraic functions and some traditional applications, including related rate problems, curvilinear motion and maximum/minimum problems.

II. STUDENT PERFORMANCE OBJECTIVES:

The basic objectives are that the student develop an understanding of the methods studied, demonstrate a knowledge of the facts presented and show an ability to use these in the solution of problems. To accomplish these objectives, exercises are assigned. Test questions will be of near equal difficulty to questions assigned in the exercises. 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 below.

III. TOPICS TO BE COVERED:	TIME FRAME:
1. Plane Analytic Geometry.	18 periods
2. The Derivative.	16 periods
3. Applications of the Derivative.	11 periods

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IV, LEARNING ACTIVITIES:

REQUIRED RESOURCES

1.0 <u>Plane Analytic Geometry</u>	Chapter 20
1.1 Basic definitions.	Questions 1 - 48, p. 563
1.2 The straight line.	Questions 1 - 52, p. 569
1.3 The circle.	Questions 1 - 44, p. 574
1.4 The parabola.	Questions 1 - 36, p. 579
1.5 The ellipse.	Questions 1 - 36, p. 585
1.6 The hyperbola.	Questions 1 - 36, p. 592
1.7 Translation of axes.	Questions 1 - 31, p. 596
1.8 The second degree equation.	Questions 1 - 26, p. 600
1.9 Review exercise.	Questions 1 - 24, p. 609 41 - 76,
2.0 <u>The Derivative</u>	Chapter 2 2
2.1 Limits.	Questions 1 - 44, p. 649
2.2 The slope of a tangent to a curve.	Questions 1 - 24, p. 655
2.3 The derivative.	Questions 1 - 32, p. 660
2.4 The meaning of the derivative.	Questions 1 - 32, p. 664
2,5 Derivatives of polynomials.	Questions 1 - 44, p. 669
2.6 Derivatives of products and quotients of functions.	Questions 1 - 44, p. 674
2.7 The derivative of a power of a function.	Questions 1 - 44, p. 680

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IV. LEARNING ACTIVITIES: (cont'd) REQUIRED RESOURCES

The Derivative - Cont'd

2.8	Differentiation of implicit.	Questions 1	22, p. 584
2.9	Higher derivatives.	Questions 1	36, p. 688
2.10	Review exercise	Questions 1	68, p. 689
3.0	<u>Applications of the Derivative</u>	Chapter 2 3	
3.1	Tangents and normals.	Questions 1	24, p. 696
3.2	Curvilinear motion.	Questions 1	24, p. 705
3.3	Related rates.	Questions 1	24, p. 709
3.4	Using derivatives in curve sketching.	Questions 1	32, p. 716
3.5	More on curves.	Questions 1	18, p. 720
3.6	Applied maximum and minimum problems.	Questions 1	32, p. 727
3.7	Review exercise.	Questions 1 - 48,	p. 728

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COURSE NAME**COURSE NUMBER****V, METHOD OF EVALUATION:**

1. Three - four tests per semester.
2. Final grade is a weighted average of these tests

90 - 100 = A+
 80 - 89 = A
 65 - 79 = B
 55 - 64 = C
 0 - 54 = R (or

Under special circumstances an X grade may be assigned to allow the student to continue with the next math, course {Technician or Technology level). If unsuccessful with this next course, both courses would have to be repeated.

All tests are scheduled in advance. Hence, attendance is mandatory. Unexcused absence from a test will result in a mark of zero for that test. If a student is prevented from writing a test by illness, the instructor should be notified before the time of the test. Upon return to class, the student should see the instructor immediately to arrange a time for a make-up test. The student should have a note from the college nurse or a doctor.

VI. REQUIRED STUDENT RESOURCES:

Washington, Basic Technical Mathematics With Calculus, fifth edition, metric version. Benjamin/Cummings Pub. Co. 1990

VII. SPECIAL NOTES:

Students with special needs (e.g. physical limitations, visual impairments, hearing impairments, learning disabilities) are encouraged to discuss required accommodations confidentially with the instructor.

Your instructor reserves the right to modify the course as he/she deems necessary to meet the needs of students.

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