

CALCULUS

MTH577-4

COURSE NAME

COURSE NUMBER

TOTAL CREDIT HOURS: 64

PREREQUISITE(S): MTH551

I. PHILOSOPHY/GOALS:

This course deals with integration of algebraic functions, applications of simple integration, velocity, acceleration, areas, volumes, differentiation and integration of transcendental functions, and methods of integration, including some applications to electrical/electronics data.

II. STUDENT PERFORMANCE OBJECTIVES:

The basic objectives are that the student develop an understanding of the methods studied, knowledge of the facts presented, and an ability to use these in the solution of problems. To accomplish these objectives, exercises are assigned. Tests questions will be of near equal difficulty to questions assigned from 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. Integration	8 periods
2. Applications of Integration	12 periods
2. Differentiation of Transcendental Functions	20 periods
3. Methods of Integration	20 periods

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IV. LEARNING ACTIVITIES:

1.0	<u>Integration</u>	Chapter 24
1.1	Differentials	Questions 1 - 32, p. 735
1.2	Antiderivatives	Questions 1 - 32, p. 738
1.3	The indefinite integral	Questions 1 - 44, p. 744
1.4	The area under a curve	Questions 1 - 15, p. 750
1.5	The definite integral	Questions 1 - 36, p. 753
1.6	Review exercise	Questions 1 - 36, p. 761 45 - 52
2.0	<u>Applications of Integration</u>	Chapter 25
2.1	Applications of the indefinite integral	Questions 1-20, 23, p.7 69
2.2	Areas by integration	Questions 1-27, p.775
2.3	Volumes by integration	Questions 1-26, p.782
2.4	Review Exercise	Questions 1-22, p.802
3.0	<u>Differentiation of Transcendental Functions</u>	Ch. 26
3.1	Derivatives of sine and cosines functions	Questions 1-50, p.809
3.2	Derivatives of other trig functions	Questions 1-46, p.813
3.3	Derivatives of inverse trigonometric functions	Questions 1-41, p.817

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IV. LEARNING ACTIVITIES: (cont'd)

3.4	<u>Applications</u>	Questions 1-8, 11-16, p.821
3.5	Derivatives of logarithmic functions	Questions 1-48, p.826
3.6	Derivatives of exponential functions	Questions 1-48, p.829
3.7	Applications	Questions 1-32, p.833
3.8	Review	Questions 1-50, p,835
4.0	<u>Methods of Integration</u>	Chapter 27
4.1	The general power formula	Questions 1 24 p. 843
4.2	The basic logarithmic form	Questions 1 28, p. 846
4.3	The exponential form	Questions 1 24, p. 850
4.4	Basic trigonometric forms	Questions 1 24, p. 853
4.5	Other trigonometric forms	Questions 1 28, p. 858
4.6	Inverse trigonometric forms	Questions ,1 28, p. 862
4.7	Review	Questions 1 36, p. 874

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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 X)

Under special circumstances an X grade may be assigned to allow the student to continue with the next math course. 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.

