

TECHNOLOGY CALCULUS

MTH578-4

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, centroids, moments of inertia, work, fluid pressure, differentiation and integration of transcendental functions, and methods of integration.

ri. 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. Test 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 | 26.periods |
| 3. Differentiation of Transcendental Functions | 20 periods |
| 4. Methods of Integration | 16 periods |

TECHNOLOGY CALCULUS

MTH578-4

COURSE NAME

COURSE NUMBER

IV. LEARNING ACTIVITIES:

REQUIRED RESOURCES

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 - 16, 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 - 12, 21, p. 769
2.2	Areas by integration.	Questions 1 - 27, p. 775
2.3	Volumes by integration.	Questions 1 - 26, p. 782
2.4	Centroids.	Questions 1 - 24, p. 789
2.5	Moments of inertia.	Questions 1 - 24, p. 794
2.6	Other applications.	Questions 1 - 28, p. 799
2.7	Review Exercise.	Questions 1 - 4, p. 802 9 - 40

COURSE NAME	COURSE NUMBER
3.0 <u>Differentiation of Transcendental Functions</u>	Chapter 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
3.4 Applications.	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

TECHNOLOGY CALCULUS

MTH57 8-4

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. INQUIRED STUDENT RESOURCES:

Washington, Basic Technical Mathematics With Calculus, Fifth edition, metric version. Benjamih/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.

