2005 Quarter 3
MATH 187 Technical Mathematics 2 (Engineering)

Outline

Hours	Topics
	Integration
1	25-1 Antiderivatives: Review of Differentiation Formula
1	25-2 The Indefinite Integral
1.5	28-1 The General Power Formula
1.5	Notes Change of Variables: Method of Substitution
0.5	25-3 The Area Under a Curve
1.5	25-4 The Definite Integral
2	25-5 Numerical Integration: The Trapezoidal Rule
1	25-6 Simpson's Rule
	Applications of Integration
1	26-1 Applications of the Indefinite Integral
1.5	26-2 Areas by Integration
1.5	26-3 Volumes by Integration
1.5	26-4 Centroids
1.5	26-5 Moments of Inertia
1	26-6 Other Applications
	Methods of Integration
1	28-2 The Basic Logarithmic Form
1	28-3 The Exponential Form
2	28-4 Basic Trigonometric Forms
2	28-5 Other Trigonometric Forms
2	28-6 Inverse Trigonometric Forms
2	28-7 Integration by Parts
2	28-8 Integration by Trigonometric Substitution
2	28-9 Integration by Partial Fractions: Nonrepeated Linear Factors
1	28-10 Integration by Partial Fractions: Other Cases

Expansion of Functions in Series

0.5	29-1	Infinite Series
1.5	29-2	Maclaurin Series
1.5	29-3	Certain Operations with Series
1.5	29-4	Computations by Use of Series Expansions
1	29-5	Taylor Series

Supplementary Topics

1	21-9	Polar Coordinates
1	21-10	Curves in Polar Coordinates
2	Notes	Integration in Polar Coordinates
0.5	S-3	Functions of Two Variables
0.5	S-4	Curves and Surfaces in Three Dimensions
0.5	S-5	Partial Derivatives
1.5	S-6	Double Integrals

Lecture	**46 hours**
Test	**6 hours**
Leeway	**3 hours**