

**BRONX COMMUNITY COLLEGE LIBRARY
SUGGESTED FOR
MTH 31
ANALYTIC GEOMETRY & CALCULUS I**
(Section numbers are according to the Syllabus)

<u>CODE NO.</u>	<u>SECT.</u>	<u>TITLE</u>
		<u><i>Chap. 1: Functions & Limits</i></u>
V1377.5	1.4	THE TANGENT PROBLEM - 20min, c1989
V1377.2		THE LIMIT THEOREM - 20min, c1989
V1377.3		LIMITS AT INFINITY - 20min, c1989
V1377.4	1.8	CONTINUITY - 20min, c1989
V1377.20		VELOCITY, ACCELERATION, RELATED RATES - 20min, c1989
		<u><i>Chap. 2: Derivatives</i></u>
V1377.6	2.1	THE DERIVATIVES - 20min, c1989
V1377.7		THE DERIVATIVES OF POLYNOMIALS - 20min, c1989
V1377.8		PRODUCT AND QUOTIENT RULES FOR DERIVATIVES - 20min, c1989
V1377.20	2.8	VELOCITY, ACCELERATION, RELATED RATES -20min, c1989
V1377.10	2.4	DERIVATIVES OF TRIGONOMETRIC FUNCTIONS - 20min, c1989
V1377.9	2.5	THE CHAIN RULE FOR DERIVATIVES - 20min, c1989
V2233.2	2.3	TRANSCENDENTAL FUNCTIONS: DIFFERENTIATION - 20min, c1991
V1377.10	2.4	DERIVATIVES OF TRIGONOMETRIC FUNCTIONS - 20min, c1989
V1377.12	3.8	DERIVATIVES OF EXPONENTIAL FUNCTIONS - 20min, c1989
V1377.18		DIFFERENTIALS - 20min, c1989
		<u><i>Chap. 3: Applications of Differentiation</i></u>
V1377.14	3.1	MAXIMUM-MINIMUM PROBLEMS -20min, c1989
V1377.15		ABSOLUTE MAXIMA AND MINIMA - 20min, c1989

	<u>Chap.4: Applications of Differentiation (Contd)</u>	
V1377.13	3.3/3.5	DERIVATIVES AND CURVE SKETCHING -20min, c1989
V1377.3	3.4	LIMITS AT INFINITY - 20min, c1989
V1377.16	3.1	APPLIED MAXIMUM AND MINIMUM PROBLEMS - 20min, c1989
V1377.19	3.8	NEWTON'S METHOD - 20min, c1989
V1377.21	3.9	ANTIDERIVATIVES - 20min, c1989
	<u>Chap. 4: Integrals</u>	
V1377.23		THE AREA PROBLEM - 20min, c1989
V1377.24	4.2	DEFINITE INTEGRALS AND AREAS - 20min, c1989
V1377.25	4.3	FUNDAMENTAL THEOREM OF CALCULUS -20min, c1989
V1377.22	4.4	THE INDEFINITE INTEGRAL - 20min, c1989
V1377.37		INTEGRATION USING TRIGONOMETRIC SUBSTITUTION -20min, c1989

Bronx Community College of the City University of New York
Department of Mathematics and Computer Science

SYLLABUS: MATH 31 - Calculus and Analytic Geometry I (4 credits/6 hours per week)

PREREQUISITE: Math 30 or equivalent

TEXT: Calculus (Seventh Edition) by James Stewart, Brooks/Cole, Pub.

(Students who do not need Math 33 may use

Single Variable Calculus (Seventh Edition) by James Stewart, Brooks/Cole, Pub.)

<u>SECTION</u>	<u>TOPIC</u>	<u>SUGGESTED EXERCISES</u>
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Chapter 1: Functions and Limits

1.4	The Tangent and Velocity Problems	49/ 1, 3, 5, 7
1.5	The Limit of a Function	59/ 1-5, 12-14, 17, 23-28
1.6	Calculating Limits Using Limit Laws	69/ 1, 3-23 odd
1.8	Continuity	90/ 3, 7, 9, 11, 15-21 odd, 25, 33, 37, 39, 41, 44, 45, 47, 51, 53, 55
	Review	95/ 1-11 odd, 17, 23, 27, 29

Chapter 2: Derivatives

2.1	Derivatives	110/1,37,19-29odd,35-43odd,47,51,53
2.2	The Derivative as a Function	122/ 1, 3, 4, 7, 19, 20, 21, 25-45 odd
2.3	Differentiation Formulas	136/ 1-43 odd, 51, 53,67,75
2.4	Derivatives of Trigonometric Functions	146/ 1-17 odd, 25, 29, 39-47 odd
2.5	The Chain Rule	154/ 1-45 odd, 47, 51, 55,69,71
2.6	Implicit Differentiation	161/ 1-19 odd, 25, 27, 35, 43, 45
2.7	Rates of Change in the Natural and Social Sciences	173/ 1-9 odd, 15, 18
2.8	Related Rates	180/ 1,3,7,8,9,11-31 odd
2.9	Linear Approximations and Differentials	187/ 1,3,5,7-25 odd,31
	Review	191/ 3,5,11, 13-37, 45, 51, 59, 61, 75, 77, 79, 82

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Chapter 3: Applications of Differentiation

3.1	Maximum and Minimum Values	204/ 3, 5, 15-27 odd, 29-55 odd
3.2	The Mean Value Theorem	212/ 1, 3, 7, 9,11, 15,19
3.3	How Derivatives Affect the Shape of a Graph	220/ 1, 5, 7, 8,9-17 odd, 29-37 odd
3.4	Limits at Infinity; Horizontal Asymptotes	234/ 3, 9-27 odd, 35, 39
3.5	Summary of Curve Sketching	242/ 1-35 odd
3.7	Optimization Problems	256/ 3, 5, 7, 11, 17, 19, 25, 29
3.8	Newton's Method	267/ 5, 7, 13-19 odd, 29
3.9	Antiderivatives	273/ 1-39 odd, 41, 43, 45
	Review	276/ 1-27 odd, 38, 41, 46, 49, 53-57 odd

Chapter 4: Integrals

4.1	Areas and Distance	293/ 1, 3, 5, 13,15,19,23
4.2	The Definite Integral	306/ 3, 5, 9, 17, 21-25odd, 31,33, 37
4.3	The Fundamental Theorem of Calculus	318/ 3,7-35 odd, 41, 45,49
4.4	Indefinite Integrals and the Net Change Theorem	326/ 1-11 odd, 19-41 odd, 55,57
4.5	The Substitution Rule	335/ 1-29 odd, 35-51 odd
	Review	338/ 2, 5, 9-27 odd, 33, 35, 37

8/03 C.O'S.

8/07 MM

7/11 MM, 9/11 AM