

BRONX COMMUNITY COLLEGE of the City University of New York
DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE

SYLLABUS: MTH 15-CALCULUS (3 credits, 3 hours)

PREREQUISITE: MTH 14

**TEXTBOOK: "BASIC TECHNICAL MATHEMATICS with CALCULUS", 10th edition
by Allyn J. Washington (ISBN-13: 978-0-13-311653-3; ISBN-10: 0-13-311653-0)**

Publisher: Pearson/Prentice Hall

Note to student: Any graphic calculator is recommended.

SECTIONS	TOPICS	SUGGESTED EXERCISES
CHAPTER 25 INTEGRATION (approx. 10 hrs.)		
25.1	Antiderivatives	p. 744/1-35 odd
25.2	The Indefinite Integral	p. 748-749/1-39 odd
25.3	The Area Under a Curve	p. 754/1,5,9,11,15,19
25.4	The Definite Integral	p. 757/1,3,5,9,13,17,21,23,25,27,29,33
25.5	Numerical Integration: The Trapezoidal Rule	p. 761/1,3,7,11
25.6	Simpson's Rule	p. 764/1,3,7,11,13
CHAPTER 26 APPLICATIONS OF INTEGRATION (approx. 8 hrs.)		
26.1	Applications of the Indefinite Integral	p. 772-773/1-25 odd
26.2	Areas by Integration	p. 777-778/1-29 odd; 33,35
26.3	Volumes by Integration	p. 783-784/1,3,5,9,13,17,21,23,27,29,38
26.4*	Centroids	p. 789-790/1,5,9,13,17,21,25,30
26.6	Other Applications	p. 799/1,5,7,13,17
CHAPTER 28 METHODS OF INTEGRATION (approx. 10 hrs.)		
28.1	The General Power Formula	p. 842-843/1-31 odd
28.2	The Basic Logarithmic Form	p. 846-847/1-37 odd
28.3	The Exponential Form	p. 849-850/1-17 odd; 25-33 odd
28.4	Basic Trigonometric Forms	p. 853/1-21 odd; 27,29,31
28.5*	Other Trigonometric Forms	p. 857/1-27 odd; 31,32,35
28.7	Integration by Parts	p. 865/1-25 odd
28.8*	Integration by Trigonometric Substitution	p. 868/1-19 odd
CHAPTER 30 EXPANSION OF FUNCTIONS IN SERIES (approx. 7 hrs.)		
30.2	Maclaurin Series	p. 912/1,3,4,5,11,17,19
30.4	Computations by Use of Series Expansions	p. 920/1,4,5,7,9,13,17
30.5	Taylor Series	p. 923/1,5,9,13,17,21
30.6	Introduction to Fourier Series	p. 929/1,3,5,7
CHAPTER 31 DIFFERENTIAL EQUATIONS (approx. 7 hrs.)		
31.1	Solutions of Differential Equations	p. 941/1,5,7;11-23 odd
31.2	Separation of Variables	p. 945/1-35 odd
31.4	The Linear Differential Equation of the First Order	p. 950/1,3,5,9,13,17,21,23,25,27,29,31
31.6	Elementary Applications	p. 956-958/1,13-21 odd; 25,27,35,36

*Optional

RG(1/2006) PY(11/2009) PY(08/2014)