

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", 9th edition
by Allyn J. Washington (ISBN: 978-0-13-814226-1)
Publisher: Pearson Prentice Hall.**

Note to student: The CASIO CFX 8950G or any TI series graphic calculator is recommended.

SECTIONS	TOPICS	SUGGESTED EXERCISES
CHAPTER 25 INTEGRATION (approx. 10 hrs.)		
25.1	Antiderivatives	p. 737/1-35 odd
25.2	The Indefinite Integral	p. 741/1-39 odd
25.3	The Area Under a Curve	p. 747/1,5,9,11,15,19
25.4	The Definite Integral	p. 750/1,3,5,9,13,17,21,23,25,27,29,33
25.5	Numerical Integration: The Trapezoidal Rule	p. 753/1,3,7,11
25.6	Simpson's Rule	p. 757/1,3,7,11,13
CHAPTER 26 APPLICATIONS OF INTEGRATION (approx. 8 hrs.)		
26.1	Applications of the Indefinite Integral	p. 764/1,3,5,7,11,13,15,17,21
26.2	Areas by Integration	p. 769/1,3,5,9,13,17,21,23,29,35
26.3	Volumes by Integration	p. 775/1,3,5,9,13,17,21,23,27,29
26.4*	Centroids	p. 781/1,5,9,13,17,21,25
26.6	Other Applications	p. 791/1,5,7,13,17
CHAPTER 28 METHODS OF INTEGRATION (approx. 10 hrs.)		
28.1	The General Power Formula	p. 834/1-31 odd
28.2	The Basic Logarithmic Form	p. 838/1-37 odd
28.3	The Exponential Form	p. 841/1-17 odd; 25,27,29
28.4	Basic Trigonometric Forms	p. 845/1-21 odd; 27,29,31
28.5*	Other Trigonometric Forms	p. 849/1-27 odd; 31,32,35
28.7	Integration by Parts	p. 857/1-25 odd
28.8*	Integration by Trigonometric Substitution	p. 860/1-19 odd
CHAPTER 30 EXPANSION OF FUNCTIONS IN SERIES (approx. 7 hrs.)		
30.2	Maclaurin Series	p. 904/1,3,4,5,11,17,19
30.4	Computations by Use of Series Expansions	p. 912/1,4,5,7,9,13,17
30.5	Taylor Series	p. 915/1,5,9,13,17,21
30.6	Introduction to Fourier Series	p. 921/1,3,5,7
CHAPTER 31 DIFFERENTIAL EQUATIONS (approx. 7 hrs.)		
31.1	Solutions of Differential Equations	p. 933/1,5,7,11,21,23
31.2	Separation of Variables	p. 937/1-35 odd
31.4	The Linear Differential Equation of the First Order	p. 942/1,3,5,9,13,17,21,23,25,27,29,31
31.5	Elementary Applications	p. 944/1,13-21 odd; 25,27,35,36

*Optional

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