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

SYLLABUS: MTH 33 – Calculus and Analytical Geometry III (5 Credits – 5 Hours per week)

PREREQUISITE: MTH 32 – Calculus and Analytical Geometry II

TEXT: Calculus (Eighth Edition) by James Stewart, Publisher: Brooks/ Cole

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SECTION	TOPIC	SUGGESTED EXERCISES
Infinite Sequences and Series		
11.1	Sequences	744/ 3 – 55 odd
11.2	Series	755/ 1-10, 15, 17-20, 43 – 47 odd
11.3	The Integral Test	765/ 1 – 25 odd
11.4	The Comparison Tests	771/ 1, 2, 3 – 29 odd, 41, 43
11.5	Alternating Series	776/ 1–19 odd, 35
11.6	Absolute Convergence and the Ratio and Root tests	782/ 7 – 37 odd
11.7	Strategy for Testing Series	786/ 1– 37 odd
11.8	Power Series	791/ 1 – 31 odd
11.9	Representation of Functions as Power Series	797/ 5 – 19 odd, 25 – 31
11. 10	Taylor and Maclaurin Series	811/ 1 – 33 odd
11.11	Applications of Taylor Polynomials	820/ 1 – 22 odd
	Review	825/ 1 – 43 odd
Vectors and the Geometry of Space		
12.1	Three- Dimensional Coordinate Systems	836/ 1–13 odd, 17, 19, 21, 25-35 odd
12. 2	Vectors	845/ 1 - 25 odd
12.3	The Dot Product	852/ 1 – 53 odd
12. 4	The Cross Product	861/ 1- 43 odd
12. 5	Equations of Lines and Planes	871/ 1 – 43 odd
	Review	882/ 1 – 20 odd

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Vector Functions		
13.1	Vector Functions and Space Curves	893/ 1 – 20 odd

13.2	Derivatives and Integrals of Vector Functions	900/ 1 – 27 odd
13.3	Arc Length and Curvature	908/ 1 – 33 odd
	Review	922/ 1 – 13 odd
Partial Derivatives		
14.1	Functions of Several Variables	939/ 3 – 27 odd
14.2	Limits and Continuity	950/ 1 – 37 odd
14.3	Partial Derivatives	964/ 11 – 40 odd, 45 – 70 odd
14.4	Tangent Planes and Linear Approximations	974/ 1 – 23 odd
14.5	The Chain Rule	983/ 1 – 34 odd
14.6	Directional Derivatives and the Gradient Vector	997/ 7 – 33 odd
14.7	Maximum and Minimum Values	1007/ 1 – 20 odd, 27 – 35 odd
	Review	1022/ 1 – 49 odd
Multiple Integrals		
15.1	Double Integrals over Rectangles	1039/ 1 – 25 odd, 39, 40
15.2	Double Integrals over General Regions	1048/ 1 – 32 odd, 39, 40
15.3	Double Integrals in Polar Coordinates	1054/ 1 – 27 odd
15.6	Triple Integrals	1077/ 1 – 23 odd
	Review	1102/ 3 – 8 odd, 9, 19, 21 – 40 odd

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