

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

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

PREREQUISITE: MTH 32 – Calculus and Analytic Geometry II or equivalent; and CUNY English Proficiency, or ENG 100 or 110, if required

TEXT: Calculus (Ninth Edition) by Stewart et al., Cengage Learning. ISBN 978-1-337-62418-3

<u>SECTION</u>	<u>TOPIC</u>	<u>SUGGESTED EXERCISES</u>
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Sequences, Series, and Power Series

11.1	Sequences	773/ 3-55 odd
11.2	Series	785/ 1-12, 15, 23-26, 45-49 odd
11.3	The Integral Test	796/ 1-25 odd
11.4	The Comparison Tests	802/ 1, 2, 7-33 odd, 48, 51
11.5	Alternating Series and Absolute Convergence	810/ 1-33 odd, 49
11.6	The Ratio and Root Tests	816/ 3-33 odd
11.7	Strategy for Testing Series	819/ 1-37 odd
11.8	Power Series	824/ 1-31 odd
11.9	Representation of Functions as Power Series	831/ 3-19 odd, 27-33
11.10	Taylor and Maclaurin Series	846/ 1-33 odd
11.11	Applications of Taylor Polynomials	856/ 1-21 odd
	Review Exercises	860/ 1-43 odd

Vectors and the Geometry of Space

12.1	Three-Dimensional Coordinate Systems	873/ 1-15 odd, 19, 21, 23, 27-37 odd
12.2	Vectors	881/ 1-25 odd
12.3	The Dot Product	890/ 1-53 odd
12.4	The Cross Product	899/ 1-43 odd
12.5	Equations of Lines and Planes	910/ 1-43 odd
	Review Exercises	922/ 1-19 odd

Vector Functions

13.1	Vector Functions and Space Curves	933/ 1-19 odd
13.2	Derivatives and Integrals of Vector Functions	940/ 1-27 odd
13.3	Arc Length and Curvature	951/ 1-33 odd
	Review Exercises	966/ 1-13 odd

Partial Derivatives

14.1	Functions of Several Variables	984/ 3-27 odd
14.2	Limits and Continuity	998/ 1-37 odd
14.3	Partial Derivatives	1008/ 9-35 odd, 41-63 odd
14.4	Tangent Planes and Linear Approximation	1019/ 1-23 odd
14.5	The Chain Rule	1029/ 1-34 odd
14.6	Directional Derivatives and the Gradient Vector	1043/ 9-39 odd
14.7	Maximum and Minimum Values	1054/ 1-19 odd, 29-37 odd
	Review Exercises	1070/ 1-49 odd

Multiple Integrals

15.1	Double Integrals over Rectangles	1087/ 1-25 odd, 45, 46
15.2	Double Integrals over General Regions	1097/ 1-39 odd, 47, 48
15.3	Double Integrals in Polar Coordinates	1105/ 1-27 odd
15.6	Triple Integrals	1130/ 1-23 odd
	Review Exercises	1156/ 3-7 odd, 9, 19, 21-39 odd

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