**Bronx Community College  
 of the City University of New York**

**Department of Mathematics and Computer Science**

**SYLLABUS: MTH 32** - Analytic Geometry and Calculus II (4 credits/ 6 hours per week)

**PREREQUISITE: MTH 31** - Calculus and Analytic Geometry I 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

Students who do not need Math 33 may use Single Variable Calculus (Ninth Edition) by

Stewart et al., Cengage Learning. ISBN 978-0-357-04291-5

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SECTION TOPIC SUGGESTED EXERCISES

Chapter 5: Applications of Integration

5.1 Areas between Curves 370: 129 odd

5.2 Volumes 384: 133 odd, 66-72

5.3 Volumes by Cylindrical Shells 392: 125 odd

Review Exercises 406: 1, 7, 9, 17, 25, 27

Chapter 6: Inverse Functions

6.1 Inverse Functions and Their Derivatives 418: 115 odd, 23-27, 35-43

Instructor’s option: 6.2-6.4 or 6.2\*-6.4\*

6.2 Exponential Functions and 429: 1, 713 odd, 2349 odd, 79-89 odd

Their Derivatives

6.3 Logarithmic Functions 438: 117 odd, 2741 odd

6.4 Derivatives of Logarithmic Functions 448: 129 odd, 4757 odd, 7585 odd

6.2\* The Natural Logarithmic Function 458: 1-37 odd, 63-75 odd

6.3\* The Natural Exponential Function 465: 5-11 odd, 25-49 odd, 75, 79-89 odd

6.4\* General Logarithmic and Exponential 476: 1-9 odd, 21-41 odd, 45-49 odd

Functions

6.6 Inverse Trigonometric Functions 493: 513 odd, 2335 odd, 45, 47, 6173 odd

6.7 Hyperbolic Functions 501: 1127 odd, 3549 odd, 6775 odd

6.8 Indeterminate Forms and 511: 14, 565 odd, 73-76

L'Hospital's Rule

Review Exercises 517: 547 odd, 6377 odd, 93105 odd

Chapter 7: Techniques of Integration

7.1 Integration by Parts 528: 141 odd, 5360

Instructor’s option: 7.4 can be done immediately after 7.1.

7.2 Trigonometric Integrals 536: 131 odd

7.3 Trigonometric Substitution 543: 129 odd

7.4 Integration of Rational Functions 553: 129 odd, 41-53 odd

by Partial Fractions

7.5 Strategy for Integration 559: 159 odd

7.8 Improper Integrals 587: 1, 531 odd, optional 57-64

Review Exercises 591: 125 odd, 5159 odd

Chapter 8: Further Applications of Integrals

8.1 Arc Length 603: 117 odd

8.2 Area of a Surface of Revolution 611: 115 odd, 33

Chapter 10: Parametric Equations and Polar Coordinates

10.3 Polar Coordinates 730: 111 odd, 1525 odd, 3349 odd

10.4 Calculus in Polar Coordinates 737: 131 odd, optional 49-52

10.5 Conic Sections 746: 147 odd

Section 10.6 is an instructor’s option.

10.6 Conic Sections in Polar Coordinates 755: 121 odd

Review Exercises 758: 11-17 odd, 3341 odd, 4959 odd

Remark: Some elements of sections 10.1 and 10.2 can be discussed as a general introduction to the curves covered in Chapters 8 and 10.

**Academic Integrity**

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Bronx Community College respects and welcomes students of all backgrounds and abilities. In the event you encounter any barrier(s) to full participation in this course due to the impact of a disability, please contact the disAbility Services Office as soon as possible this semester.  The disAbility Services specialists will meet with you to discuss the barriers you are experiencing and explain the eligibility process for establishing academic accommodations for this course. You can reach the disAbility Services Office at: [disability.services@bcc.cuny.edu](mailto:disability.services@bcc.cuny.edu), Loew Hall, Room 211, (718) 289-5874.

10/2014 M.M. & I.P. - 08/2016 A.W. - 08/2022 R.G. - Last updated 08/18/2022

01/23 EA COVID – 07/23 removed - 08/23 EA credit update