Bronx Community College of the City University of New York

Department of Mathematics and Computer Science

SYLLABUS: MTH 32  Calculus and Analytic Geometry II (5 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.

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