BRONX COMMUNITY COLLEGE of the City University of New York

DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE

**SYLLABUS: MTH 13 – TRIGONOMETRY and COLLEGE ALGEBRA (3 credits, 4 hours)**

# PREREQUISITE: MTH 28 or equivalent

**TEXTBOOK: “BASIC TECHNICAL MATHEMATICS with CALCULUS”, 10th edition**

 **by Allyn J. Washington (ISBN-13: 978-0-13-311653-3;**

 **ISBN-10: 0-13-311653-0)**

**Publisher: Pearson/Prentice Hall**

Note to Student: Any scientific calculator is recommended for this class

# SECTIONS TOPICS SUGGESTED EXERCISES

# CHAPTER 9: VECTORS and OBLIQUE TRIANGLES ( 4 hours)

9.1 Introduction to Vectors p. 261 /9,13,15,23,37,41,45

9.2 Components of Vectors p. 264 /5,7,13,17,21,23,27,29

9.3 Vector Addition by Components p. 270 /3,7,11,13,15,21,25,29

9.4 Applications of Vectors p. 273 /3,5,7,13,17,19,22

**CHAPTER 12: COMPLEX NUMBERS ( 8 hours)**

12.1 Basic Definitions p. 340 /5,9,11,21,23,27,31,37,49,53

12.2 Basic Operations with Complex Numbers p. 343 /7,11,17,19,25,31,35,41,45

12.3 Graphical Representation of Complex Numbers p. 345 /5,13,17,29

12.4 Polar Form of a Complex Number p. 348 /3,7,15,19,21,25,29,33

12.5 Exponential Form of a Complex Number p. 350 /5,9,11,17,21,27233,37

* 1. Products, Quotients, Powers, and Roots p. 356 /5,7,9,11,17,25,29,35,37,39

Of Complex Numbers

# CHAPTER 3: FUNCTIONS and GRAPHS ( 4 hours)

3.1 Introduction to Functions p. 83 /5-27 odd

3.2 More about Functions p. 87 /5,7,15,17,25,29,31,37

3.4 The Graph of a Function p. 94 /7,11,19,29,33,37,41

# CHAPTER 13: EXPONENTIAL AND LOGARITHMIC FUNTIONS ( 8 hours)

13.1 Exponential Functions p. 368 /3,7,9,11,13,17,19,22,23,26,28

13.2 Logarithmic Functions p. 372 /5,9,15,19,27,29,35,43,63,65

13.3 Properties of Logarithms p. 377 /9,17,19,25,27,31,35,41,43,47,49,53,55

13.5[[1]](#footnote-1)\* Natural Logarithms p. 383 /9,11,13,19,23,43,45,49,51

13.6 Exponential and Logarithmic Equations p. 386 /5,11,17,21,27,29,39,43,47,49

# CHAPTER 10: GRAPHS OF THE TRIGONOMETRIC FUNCTIONS ( 4 hours)

10.1 Graphs of ***y = a sin x*** and ***y = a cos x*** p. 294 /3,5,13,19,27,29,33

10.2 Graphs of ***y = a sin bx*** and ***y = a cos bx*** p. 297 /7,11,15,19,27,33,39,43,53,55,61,63

10.3 Graphs of y = ***a sin (bx + c)*** and ***y = a cos (bx + c)*** p. 301 /3,9,13,19,23,25,27,35,37

10.4 Graphs of ***y = tan x, y = cot x, y = sec x, y = csc x*** p. 304 /3,7,15,23

10.5 Applications of the Trigonometric Graphs p. 306 /1,3,5,7,9,11,13

# CHAPTER 20: ADDITIONAL TOPICS IN TRIGONOMETRY ( 10 hours)

20.1 Fundamental Trigonometric Identities p. 537 /7,11,15,23,25,29,33,35,37,43,49,66

20.2 The Sum and Difference Formulas p. 542 /3,5,7,9,13,19,23,25,31

20.3 Double-Angle Formulas p. 545 /9,15,17,21,23,29,31,33,37,39

20.4 Half-Angle Formulas p. 549 /9,11,13,21,23,29,31,35,39,42

20.5 Solving Trigonometric Equations p. 553 /5,9,13,15,19,23,27,29,33

20.6 The Inverse Trigonometric Functions p. 553 /11,13,15,21,23,25,27,33,35,41,44,47

# CHAPTER 5: SYSTEMS OF LINEAR EQUATIONS; DETERMINANTS ( 5 hours)

* 1. Solving Systems of Two Linear Equations in p. 158 /5,9,15,17,19,21,27,39.

 Two Unknowns by Determinants

5.6 Solving Systems of Three Linear Equations in p. 162 /3,7,11,13,21

 Three Unknowns Algebraically

5.7 Solving Systems of Three Linear Equations in p. 168 /3,5,7,13,15,17,25,36

 Three Unknowns by Determinants

**Academic Integrity**

Academic dishonesty (such as plagiarism and cheating) is prohibited at Bronx Community College and is punishable by penalties, including failing grades, dismissal and expulsion. For additional information and the full policy on Academic Integrity, please consult the BCC College Catalog.

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Spring 2009 (NN/RG) 2010,2013 (PY)

03/01/2019
8/2022 for prereq (EA)

1. \* The Common Logarithms in Section 13.4 can be reviewed briefly.

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