BOROUGH OF MANHATTAN COMMUNITY COLLEGE
City University of New York

Department of Mathematics

Elementary Algebra
MAT 51
Semester: Spring 2020
Credits: 0

Class hours: 4

Instructor Information
Name: Ivan Retamoso
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Website: https://openlab.bmcc.cuny.edu/elementary-algebra-mat-51-1107/

MAT 51-1107 (12002) meets:
Monday from 11:00 am to 12:40 pm at 70 Murray M1209 and
Wednesday from 11:00 am to 12:40 pm at 70 Murray M309.

My Office Hours:
Monday at S642D from 9:00 am to 10:30 am and
Friday at S642D from 10:00 am to 11:30 am.

Course Description

This elementary algebra course includes topics such as arithmetic with integers, algebraic representation, operations with polynomials, linear equations, systems of two linear equations in two variables, exponents, radicals, factoring, and graphs of linear equations.

Pre-Requisites and placements:

ESL 62. Students are placed into this course based on their ACCUPLACER (or equivalent) score. Students who passed MAT 8 or the MAT 12 Pre-Algebra Assessment Exam can also be placed in this class.

Student Learning Outcomes and Assessment

Course Student Learning Outcomes	Measurements
1) Operations a. Operations of Real Numbers b. Exponents: Multiply and divide monomial expressions with a common base using the properties of exponents. c. Scientific Notation: Convert between standard decimal form and scientific notation. d. Radicals in the real number system *i.* Simplify radicals *ii.* Perform addition, subtraction, multiplication and division using like and unlike radical terms and express the result in simplest form.	Homework, quizzes, assignments, midterm, final exam, CUNY Elementary Algebra Final Exam(CEAFE)
2) Variables and Expressions a. Translate a quantitative verbal phrase into an algebraic expression. b. Add and subtract polynomials. c. Evaluate algebraic expressions by substitution. d. Multiplication of polynomials. e. Divide a polynomial by a monomial. f. Factoring	Homework, quizzes, online problem assignments, midterm,

i. Identify and factor the greatest common factor from an algebraic expression. *ii.* Identify and factor the difference of two perfect squares. *iii.* Factor all trinomials of a single variable, including a leading coefficient other than 1. *iv.* Factor algebraic expressions by grouping with 4 terms *v.* Factor algebraic expressions completely where factorization requires more than one step	final exam, CEAFE
3) Equations and Inequalities a. Translate sentences into mathematical expressions or equations. b. Solve linear equations in one variable. c. Solve systems of Linear Equations in two variables algebraically and graphically. d. Solve literal equations. e. Solve Quadratic Equations. *i.* Solve Quadratic Equations by factoring. *ii.* Solve application problems. f. Solve linear inequalities in one variable and graph the solution set.	Homework, quizzes, online problem assignments, midterm, final exam, CEAFE
4) Coordinate Geometry a. Slope and equation of a line *i.* Determine the slope of a line, given either the coordinates of two points on the line or a graph of the line. *ii.* Determine the slope of a line, given its equation in any form. *iii.* Write the equation of a line, given its slope and the coordinates of a point on the line or given the coordinates of two points on the line. *iv.* Write the equation of vertical or horizontal lines. *v.* Find the slope of any line parallel or perpendicular to a given line. *vi.* Convert any line into any one of the following forms: Point-Slope form, Slope-Intercept form, and standard form. b. Graph a line.	Homework, quizzes, online problem assignments, midterm, final exam, CEAFE
5) Proportions and percent a. Solve application problems with proportions. b. Solve application problems with percentages.	Homework, quizzes, online problem assignments, midterm, final exam, CEAFE

General Education Outcomes and Assessment

General Education Learning Outcomes	**Measurements**
Communication Skills- Students will be able to write, read, listen and speak critically and effectively.	Homework, quizzes, online problem assignments, midterm, final exam, CEAFE
Quantitative Reasoning- Students will be able to use quantitative skills and the concepts and methods of mathematics to solve problems.	Homework, quizzes, online problem assignments, midterm, final exam, CEAFE

Information & Technology Literacy- Students will be able to collect, evaluate and interpret information and effectively use WebAssign information technologies.	Homework, quizzes, online problem assignments, midterm, final exam, CEAFE

Math Lab (Free Mathematics Tutoring)
The Math Lab is located in S535. You will need a valid BMCC student ID to visit the Math Lab. Tutors are available in the Math Lab for free to all BMCC students. The Math Lab has worksheets with practice problems in stock, as well as computer- and video-based tutoring.

Required Text:

Zero cost OER Textbook can be downloaded as a PDF file and it can be read online or offline, by clicking the link below.

https://openstax.org/details/books/elementary-algebra

Also, you can get the Textbook by downloading the free OpenStax + SE app.

For IOS (Apple) go to:

https://apps.apple.com/us/app/openstax-with-studyedge/id1473661166?book=elementary-algebra

For Android go to:

https://play.google.com/store/apps/details?id=com.openstax.openstax&hl=en

Homework

Homework will be assigned on http://helpyourmath.com/immersion/homework
You must register on the website above, our class is: MAT 51 section 1107.

Evaluation and Requirements of Students
The final course grade will be either a passing grade of S (satisfactory), or a non-passing grade of R (repeat).
To pass the course, students must have an overall course average of 70% or higher.
(See complete grade distribution below)

REQUIRED Grade Distribution

Midterm:	**20 %**
Departmental Final:	**20 %**
CUNY EXAM (CEAFE):	**35 %**
Homework and Quizzes:	**25 %**

BMCC is committed to the health and well-being of all students. It is common for everyone to seek assistance at some point in their life, and there are free and confidential services on campus that can help.

Single Stop www.bmcc.cuny.edu/singlestop, room S230, 212-220-8195. If you are having problems with food or housing insecurity, finances, health insurance or anything else that might get in the way of your studies at BMCC, come by the Single Stop Office for advice and assistance. Assistance is also available through the Office of Student Affairs, S350, 212-220- 8130.

Counseling Center www.bmcc.cuny.edu/counseling, room S343, 212-220-8140. Counselors assist students in addressing psychological and adjustment issues (i.e., depression, anxiety, and relationships) and can help with stress, time management and more. Counselors are available for walk-in visits.

Office of Compliance and Diversity www.bmcc cuny.edu/aac, room S701, 212-220-1236. BMCC is committed to promoting a diverse and inclusive learning environment free of unlawful discrimination/harassment, including sexual harassment, where all students are treated fairly. For information about BMCC's policies and resources, or to request additional assistance in this area, please visit or call the office, or email olevy@bmcc.cuny.edu, or twade@bmcc.cuny.edu. If you need immediate assistance, please contact BMCC Public safety at 212-220-8080.

Office of Accessibility www.bmcc.cuny.edu/accessibility, room N360 (accessible entrance: 77 Harrison Street), 212-220-8180. This office collaborates with students who have documented disabilities, to coordinate support services, reasonable accommodations, and programs that enable equal access to education and college life. To request an accommodation due to a documented disability, please visit or call the office.

College Attendance Policy
At BMCC, the maximum number of absences is limited to one more hour than the number of hours a class meets in one week. For example, you may be enrolled in a three-hour class. In that class, you would be allowed 4 hours of absence (not 4 days). In the case of excessive absences, the instructor has the option to lower the grade or assign an F or WU grade.

BMCC Policy on Plagiarism and Academic Integrity Statement
Plagiarism is the presentation of someone else's ideas, words or artistic, scientific, or technical work as one's own creation. Using the idea or work of another is permissible only when the original author is identified. Paraphrasing and summarizing, as well as direct quotations, require citations to the original source. Plagiarism may be intentional or unintentional. Lack of dishonest intent does not necessarily absolve a student of responsibility for plagiarism. Students who are unsure how and when to provide documentation are advised to consult with their instructors. The library has guides designed to help students to appropriately identify a cited work. The full policy can be found on BMCC's Web site, www.bmcc.cuny.edu. For further information on integrity and behavior, please consult the college bulletin (also available online).

Suggested Schedule

Week 1	**Chapter 1** The Basics 1.1 Variables, Notation, and Symbols 1.2 Real Numbers 1.3 Addition and Subtraction of Real Numbers 1.4 Multiplication of Real Numbers 1.5 Division of Real Numbers	Week 8	**Chapter 5** Exponents and Polynomials 5.1 Multiplication with Exponents 5.2 Division with Exponents (scientific notation) 5.3 Operations with Monomials 5.4 Addition and Subtraction of Polynomials
Week 2	1.6 Properties of Real Numbers 1.7 Subsets of Real Numbers 1.8 Addition and Subtraction of Fractions with Variables **Chapter 2** Linear Equations and Inequalities 2.1 Simplifying Expressions 2.2 Addition Property of Equality	Week 9	5.5 Multiplication with Polynomials 5.6 Binomial Squares and Other Special Products 5.7 Dividing a Polynomial by a Monomial **Chapter 6** Factoring 6.1 The GCF and Factoring by Grouping
Week 3	2.3 Multiplication Property of Equality 2.4 Solving Linear Equations (including rational equations from supplemental material) 2.5 Formulas 2.6 Applications Proportions and Percentages	Week 10	6.2 Factoring Trinomials 6.3 More Trinomials to Factor 6.4 The Difference of Two Squares
Week 4	2.7 More Applications 2.8 Linear Inequalities **Chapter 3** Linear Equations and Inequalities in Two Variables 3.1 Paired Data and Graphing Ordered Pairs 3.2 Solutions to Linear Equations in Two Variables	Week 11	6.6 Factoring: A General Review 6.7 Solving Equations by Factoring **Chapter 7** Rational Expressions 7.1 Simplifying Rational Expressions **Chapter 8** Square Roots 8.1 Definitions and Common Roots
Week 5	3.3 Graphing Linear Equations in Two Variables 3.4 More on Graphing: Intercepts 3.5 The Slope of a Line 3.6 Finding the Equation of a Line	Week 12	8.2 Properties of Radicals 8.3, 8.4 Operations with Radicals **Pythagorean Theorem**
Week 6	**Chapter 4** Systems of Linear Equations 4.1 Solving Linear Equations by Graphing 4.2 The Elimination Method 4.3 The Substitution Method 4.4 Applications	Week 13	Review for Final Exam **Department Final Exam**(13^{th} or 14^{th} week)
Week 7	Review for Midterm Exam **Departmental Midterm Exam:** *Signed Numbers, Algebraic Expressions and Exponents, Solving and Graphing Linear Equations/Inequalities, Systems of Linear Equations*	Week 14	**Department Final Exam** Review for the **CUNY-Wide Math EXAM (CEAFE)**
		Week 15	**MATH CUNY-Wide EXAM (CEAFE)**