

BOROUGH OF MANHATTAN COMMUNITY COLLEGE
City University of New York

Department of Mathematics

Elementary Algebra
MAT 51
Semester:
Credits: 0

Class hours: 4
Instructor Information
Name:
Email:
Phone:
Office:

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>i.</i> Simplify radicals <i>ii.</i> 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 <i>i.</i> Identify and factor the greatest common factor from an algebraic expression. <i>ii.</i> Identify and factor the difference of two perfect squares. <i>iii.</i> Factor all trinomials of a single variable, including a leading coefficient other than 1. <i>iv.</i> Factor algebraic expressions by grouping with 4 terms <i>v.</i> Factor algebraic expressions completely where factorization requires more than one step	Homework, quizzes, online problem assignments, midterm, 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>i.</i> Solve Quadratic Equations by factoring.	Homework, quizzes, online problem assignments, midterm,

<ul style="list-style-type: none"> ii. Solve application problems. f. Solve linear inequalities in one variable and graph the solution set. 	final exam, CEAFE
<p>4) Coordinate Geometry</p> <ul style="list-style-type: none"> a. Slope and equation of a line <ul style="list-style-type: none"> 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
<p>5) Proportions and percent</p> <ul style="list-style-type: none"> 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

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.

Course Requirements

Text-Charles McKeague, *Elementary Algebra, 9th edition*, Cengage, and WebAssign's online homework access code.

For the reduced price, purchase only on the following online Cengage BMCC microsite. Copy the following URL exactly: <http://cengagebrain.com/micro/2010447MC>

Choose one of the following options:

1. **e-book with *WebAssign access code*** (for life-of-edition (LOE) of the textbook)
ISBN13: 978-1-337-76931-0..... \$53 (*Higher price of \$75 at the BMCC bookstore and the WebAssign website.*)
2. (Bundle) **Loose-leaf (not bound) Custom *Elementary Algebra, 9th edition*** textbook (includes e-book with *WebAssign access code*-for life-of-edition [LOE] of the text book)
ISBN13: 978-1-337-89492-0.....\$115.00 (*Higher price at the BMCC bookstore.*)

Use of Technology

- All students are required to use the **WebAssign** online courseware system. It contains videos, homework problems, chapter tests and quizzes, step-by-step help, an online version of the textbook, and more.
- Students can obtain the online courseware only by buying a **new textbook** that includes a student access card or by buying a **separate access code**.

Steps for signing on to WebAssign:

Step 1: Go to webassign.com or webassign.net then click "Enter Class Key" in the top right corner

Step 2: Enter the Class Key provided by your instructor which looks like this: EXAMPLE

Step 3: Verify your instructor & class information, then click "Yes, this is my class"

Step 4: If you have used WebAssign in the past, log-in with that information

-or-

If you have not used WebAssign in the past, click "Create Account" and enter your information. (Enter the a preferred email address that you use regularly (it does not have to be your BMCC email)

-or-

If you log-in and are prompted to link your WebAssign account click "Link your WebAssign Account" and enter that information

Step 5: After logging in you will be given an option to "Verify Payment". If you have already purchased access through the microsite provided by your instructor, (<http://cengagebrain.com/micro/2010447MC>) then click "Verify Payment." If not, you can select "I'll do it later" and use the Courtesy Access period and purchase full access later. After the free grace period, you will not be able to continue without paying for the system.

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 %

If your score on the Midterm Exam is below 70%, you are required to complete the online WebAssign Intervention Assignments with a score of 70% or higher on each assignment. All other students are strongly encouraged to complete these intervention assignments for extra practice and/or course grade improvement.

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.

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) (Supplemental Material on WebAssign) 2.5 Formulas 2.6 Applications Proportions and Percentages (Supplemental material on WebAssign)	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 (Supplemental Material on WebAssign)
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: <i>Signed Numbers, Algebraic Expressions and Exponents, Solving and Graphing Linear Equations/Inequalities, Systems of Linear Equations</i>	Week 14	Department Final Exam Review for the CUNY-Wide Math EXAM (CEAFE)
		Week 15	MATH CUNY-Wide EXAM (CEAFE)