

# The City University of New York

<b>DEPARTMENT:</b>	Mathematics
<b>COURSE:</b>	MAT 065 (or MAT 065+)
<b>TITLE:</b>	Elementary Algebra with Basic Mathematics Review
<b>DESCRIPTION:</b>	Fundamentals of elementary algebra with an integrated review and reinforcement of arithmetic skills. Topics include the real number system, numerical evaluation, algebraic operations, algebraic and graphical solutions of two variable linear equations, word problems, algebraic fractions, quadratic equations, and the Pythagorean Theorem.
<b>TEXTBOOK &amp; HOMEWORK:</b>	Knewton-Alta or Webwork (determined by instructor)
<b>OPEN RESOURCES:</b>	Elementary Algebra Textbook: <u>Arithmetic/Algebra</u> Edition 3.0 by Bonamome, Carley, ElHitti, Tradler, Zhou <a href="http://www.citytech.cuny.edu/mathematics/docs/Arithmetic_Algebra_v3.pdf">http://www.citytech.cuny.edu/mathematics/docs/Arithmetic_Algebra_v3.pdf</a>  <u>Arithmetic/Algebra</u> Homework <a href="http://www.citytech.cuny.edu/mathematics/docs/MAT0650_HW.pdf">http://www.citytech.cuny.edu/mathematics/docs/MAT0650_HW.pdf</a>  <u>GPS for MAT 0650</u> Workbook by Joel Greenstein <a href="http://www.citytech.cuny.edu/mathematics/docs/review/MAT0650_GPS.pdf">http://www.citytech.cuny.edu/mathematics/docs/review/MAT0650_GPS.pdf</a>  Student Resources: <a href="http://www.citytech.cuny.edu/mathematics/student-resources.aspx">http://www.citytech.cuny.edu/mathematics/student-resources.aspx</a>
<b>CREDITS:</b>	5 class hours 0 credits (or 5 class hours + PLTL session 0 credits)
<b>PREREQUISITE:</b>	University Placement Criteria
<b>CALCULATORS:</b>	The use of four function and Scientific Calculators are permitted after the midterm.

## **Grading Policy for Developmental Math**

**S** – Satisfactory – student successfully completes and passes the course.

To earn an S grade, student must have BOTH

A Course Average  $\geq 70$  **AND** Departmental Final Grade  $\geq 56$

There are two possible NON PASSING grades:

**R** – Repeat – student in good attendance standing, fails the course.

**WU** – unofficial withdrawal – student, with excessive absences, fails the course

Students in developmental math **do not** have the option to officially withdraw from the course.

## **Mathematics Department**

### **Academic Statement and Policy on Lateness/Absence**

It is crucial for students to attend and participate fully in every class, whether it's lecture, computer lab, individual work, group work, or exams. Absences and latenesses of any kind, excused or unexcused, are discouraged. They disrupt learning and cause work to fall behind. To encourage good attendance practice, the math department implements an attendance policy which allows for absences of no more than 15% of the total number of class meeting sessions. Absences exceeding 15% will be considered excessive. A lateness is marked when a student misses 15 minutes of instructional time for that session, by arriving late, leaving early, or taking an unofficial break in-between. Two latenesses equate to one absence. Incorporating the attendance policy, there are three possible grades for the course:

- A student with a WU grade is not eligible for the intercession express course (MAT0675) or the free summer course (MAT065/065CO)
- Students in developmental math are mandated to stay in the course. They do not have the option to officially withdraw from the course.

## **New York City College of Technology Policy on Academic Integrity**

Students and all others who work with information, ideas, texts, images, music, inventions, and other intellectual property owe their audience and sources accuracy and honesty in using, crediting, and citing sources. As a community of intellectual and professional workers, the College recognizes its responsibility for providing instruction in information literacy and academic integrity, offering models of good practice, and responding vigilantly and appropriately to infractions of academic integrity. Accordingly, academic dishonesty is prohibited in The City University of New York and at New York City College of Technology and is punishable by penalties, including failing grades, suspension, and expulsion. The complete text of the College policy on Academic Integrity may be found in the college catalog.

## Course Intended Learning Outcomes/Assessment Methods

Learning Outcomes	Assessment Methods
1. Evaluate numerical and algebraic expressions, formulas, and equations involving rational numbers in integer, fractional, and decimal form.	1. Classroom activities and discussion, homework, exams.
2. Perform operations with and simplify polynomial, rational, and radical expressions.	2. Classroom activities and discussion, homework, exams.
3. Solve one variable linear and factorable quadratic equations.	3. Classroom activities and discussion, homework, exams.
4. Find and graph solutions to two variable linear equations	4. Classroom activities and discussion, homework, exams.
5. Derive a two variable linear equation given the slope and y-intercept, the slope and a point, or two points on its line graph.	5. Classroom activities and discussion, homework, exams.
6. Solve systems of two variable equations algebraically.	6. Classroom activities and discussion, homework, exams.
7. Students will be able to apply their knowledge of algebra to solve verbal problems including profit and loss, ratios and proportions, percent, time-rate-distance, and the Pythagorean Theorem.	7. Classroom activities and discussion, homework, exams.

## General Education Learning Outcomes/Assessment Methods

Learning Outcomes	Assessment Methods
1. Understand and employ both quantitative and qualitative analysis to solve problems.	Classroom activities and discussion, homework, exams.
2. Employ scientific reasoning and logical thinking.	Classroom activities and discussion, homework, exams.
3. Communicate effectively using written and oral means.	Classroom activities and discussion, homework, exams.
4. Use creativity to solve problems.	Classroom activities and discussion, homework, exams.

SYLLABUS MAT 0650 & MAT0650+		Practice Exercises using Knewton ALTA	Practice Exercises using e-book
Lesson	Topics	Due dates found on the Knewton website	Arithmetic/Algebra Homework <a href="http://www.citytech.cuny.edu/mathematics/docs/MAT0650_HW.pdf">http://www.citytech.cuny.edu/mathematics/docs/MAT0650_HW.pdf</a>
1	Introduction to Requirements & Policies Signed Numbers	<b>Practice 1a:</b> Addition/Subtraction of Signed Numbers <b>Practice 1a:</b> Multiplication/Division of Signed Numbers	Chapter 1: 1 – 5 Chapter 1: 6 – 9, 10 a – d
2	Order of Operations Evaluating Expressions	<b>Practice 2a:</b> Exponents & Order of Operations <b>Practice 2b:</b> Evaluating Expressions	Chapter 4: 1, 3 – 7
3	Combining Like Terms Adding/Subtracting Polynomials Properties of Positive Exponents	<b>Practice 3a:</b> Combining Like Terms Addition and Subtraction of Polynomials <b>Practice 3b:</b> Product/Quotient Properties of Positive Exponents	Chapter 7: 1 – 3 Chapter 8: 1 – 3 Chapter 5: 1 – 6, 9a, 10a
4	Multiplying all types of Polynomials	<b>Practice 4:</b> Multiplying Monomials, Binomials and Polynomials	Chapter 9: 1 – 4, 6
5	Division of Polynomials	<b>Practice 5:</b> Dividing Polynomials by Monomials <b>REVIEW FOR EXAM 1</b>	Chapter 10: 1, 2
6	<b>EXAM 1</b> Greatest Common Factor	<b>Practice 6:</b> Finding the GCF	Chapter 12: 1 – 5
7	Factoring by Grouping Factoring Difference of Two Squares – include GCF	<b>Practice 7a:</b> Factoring by Grouping <b>Practice 7b:</b> Factoring the Difference of Two Squares (with GCF)	Chapter 13: 1, 2a – g
8	Trinomial Factoring $a = 1$ and GCF	<b>Practice 8:</b> Factoring Trinomials $a=1$ and GCF	Chapter 14: 1, 2
9	Factoring Trinomials $a \neq 1$	<b>Practice 9:</b> Factoring Trinomials $a \neq 1$	Chapter 14: 3 – 5
10	Review Factoring Methods	<b>Practice 10:</b> Review Factoring Methods <b>REVIEW FOR EXAM 2</b>	Chapter 15: 1 – 5
11	<b>EXAM 2</b> Checking Solutions of Equations	<b>Practice 11:</b> Checking Solutions of Equations	
12	Solving First Degree Equations	<b>Practice 12a:</b> Solving Basic Linear Equations <b>Practice 12b:</b> Solving First Degree Equations with Parentheses	Chapter 16: 1, 2
13	Solving Rational Equations	<b>Practice 13:</b> Solving Rational Equations	Chapter 17: 9, 10
14	Solving Inequalities	<b>Practice 14a:</b> The Number Line & Interval Notation <b>Practice 14b:</b> Solving Linear Inequalities	Chapter 21: 1
15	Solving Quadratic Equations	<b>Practice 15:</b> Solving Quadratic Equations by Factoring <b>REVIEW FOR EXAM 2</b>	Chapter 20: 1, 2a – b
16	Simplifying a Rational Expression by Factoring	<b>Practice 16*:</b> Simplifying Rational Expressions by Factoring	Chapter 22: 1

17	Multiplying & Dividing Rational Expressions	<b>Practice 17a:</b> Multiplying & Dividing Numerical Fraction <b>Practice 17b*:</b> Multiplying & Dividing Rational Fractions <b>REVIEW FOR EXAM 3</b>	Chapter 22: 2, 3a – d, 4
18	<b>EXAM 3</b> Combining Rational Expressions	<b>Practice 18a:</b> Combining Numerical Fractions <b>Practice 18b*:</b> Combining Rational Expressions	Chapter 23: 1, 2
19	Solving Literal Equations	<b>Practice 19:</b> Solving Literal Equations	Chapter 19: 1- 11
20	Plotting Points Horizontal and Vertical Lines & Intercepts Graphing Lines & Determining the slope and y-intercept	<b>Practice 20a:</b> Plotting pts, drawing Hor. & Ver. lines Finding intercepts <b>Practice 20b:</b> Using the slope and y-intercept form to graph a line.	Chapter 25: 2 – 5 Chapter 26: 3 – 7
21	Writing the Equation of a line passing through two given points	<b>Practice 21a:</b> Writing equation of a line given the slope and a point on the line <b>Practice 21b:</b> Writing the equation of a line given two points	Chapter 26: 10- 14
22-23	Solving a system of Linear Equations – Graphically & Algebraically	<b>Practice 22:</b> Solving a System of Linear Equations Graphically <b>Practice 23a:</b> Solving a System of Linear Equations by Substitution <b>Practice 23b:</b> Solving a System of Linear Equations by Elimination <b>REVIEW FOR EXAM 4</b>	Chapter 27: 1 - 3 Chapter 28: 2
24	<b>EXAM 4</b> Simplifying Radicals and Pythagorean Theorem	<b>Practice 24a:</b> Simplifying Square Roots <b>Practice 24b:</b> Pythagorean Theorem	Chapter 11: 1a – g, 2, 4
25	Combining Square Roots & Multiply & Divide Square Roots (no rationalizing the denominator)	<b>Practice 25a:</b> Combining Square Roots <b>Practice 25(b) &amp; (c)*:</b> Multiplying & Dividing Square Roots	Chapter 11: 6 – 8, 10, 11a – f, 12 Chapter 20: 3 - 5
26	Verbal Problems types: Number & Proportion	<b>EXAM 3</b> <b>Practice 26:</b> Verbal problems- number & proportions	Chapter 18: 1, 4, 5
27	Verbal Problems types: Distance & Percent	<b>Practice 27a:</b> Distance Problems <b>Practice 27b:</b> Percent problems <b>REVIEW FOR EXAM 5</b>	Chapter 18: 6, 7, 9, 10
28	<b>EXAM 5</b>	<b>Final exam review 1R &amp; 2R</b>	1R, 2R
29	Review	<b>3R</b>	3R
30	Final Exam		

\* Are labeled quizzes but are custom homework assignments containing problems not available in the Knewton.