**NEW YORK CITY COLLEGE OF TECHNOLOGY**

**The City University of New York**

**DEPARTMENT:** Mathematics

**COURSE:** MAT 065 (or MAT 065+)

**TITLE:** Elementary Algebra with Basic Mathematics Review

**DESCRIPTION:** 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.

**REQUIRED HOMEWORK** Aleks **/**WeBwork (determined by instructor)

**SYSTEM**

**PLTL Resouces:**

Arithmetic/AlgebraEdition 3 by Bonamome, Carley, ElHitti, Tradler,Zhou

GPS for MAT 0650 –A Workbook of Problems for College Algebraby Greenstein

 **\***Available on the Mathematics Department Website – (Student Resources)

and

 Under the heading Instructor’s Resources in the ALEKS program

**CREDITS:** 5 class hours 0 credits (or 5 class hours + PLTL session (0 credits)

**PREREQUISITE:** University Placement Criteria

 **CALCULAORS:**  The use of four function and Scientific Calculators are permitted.

 No graphing calculators or cell phone calculators.

1. The Course Average is calculated as follows:

1. The Class Average, (based on class exams, quizzes, homework and classwork)

= 30% of Course Average.

2. Departmental Final Exam = 35% of Course Average.

3. CUNY Elementary Algebra Final Exam (CEAFE) = 35% of Course Average.

 0.30(Class Average) + 0.35(Dept. Final) +0.35(CEAFE) = Course Average

 To pass the course (a grade of S) a student must have

 a. An overall Course Average ≥ 70,  **AND**

 b. Departmental Final Grade ≥ 56

**Course Intended Learning Outcomes/Assessment Methods**

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| **Learning Outcomes** | **Assessment Methods** |
| **1.** Evaluate numerical and algebraic expressions, formulas, andequations 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 tosolve 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**

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| **Learning Outcomes** | **Assessment Methods** |
| **1.** Understand and employ both quantitative and qualitativeanalysis 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. |

**Developmental 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 lateness 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.  Each lateness is equivalent to ½ and absence.

Grading Policy for Developmental Math

**S** – Satisfactory – student successfully completes and passes the course if the student has

BOTH

a. A Course Average ≥ 70,  **AND**

 b. Departmental Final Grade ≥ 56

There are two possible NON PASSING grades.

R – Repeat – student, in **good attendance** (lateness/attendance policy described above).

**WU** – unofficial withdrawal – student, with excessive absences.

Students in developmental math are mandated to stay in the course.  They do not have the option to officially withdraw from the course.

**Eligibility for Free Intercession or Summer Course**

Only students with an R grade are eligible to register for a free (MAT0650, 0650+) course.

Students failing with a WU grade are not eligible for any free courses.

**R** and **WU** grades in non-credit developmental courses do not count in the GPA,

**But** students are given only two attempts to pass the course before they are dismissed from the College. (The Free course does not count as an attempt)

**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 catalog

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| Syllabus MAT 0650Revised 11/19 | **Homework Assignments****ALEKS** | **Practice Exercises for PLTL Component using GPS** | **Practice Exercises for PLTL Component using e-book** |
| **Lesson** | **Topics** |  Due dates found on the ALEKS website  | **GPS**Sections | **Arithmetic/Algebra e-book**: |
| 1 | Chapter 1:Introduction to Requirements PoliciesSign Numbers | Homework 1-Sign Numbers-  | Sections:1.1 & 2.11.1: 1 – 23 odd2.1: 3-13 odd, 17 -23 odd, 33, 39, 43, 51 |  Chapter 1:1 - 5  |
| 2 | Chapters 1 & 4:Order of OperationsEvaluating Expressions  | Homework 2-Order of Operations & Evaluating Expressions | Sections:2.2 & 3.12.2 :1 – 39 odd &3.1: 1 – 21 odd |  Chapter 1:  6 -9, 10 a- d Chapter 4:  1, 3 - 7 |
| 3 | Chapters 7 & 8:Combining Like Terms – Adding and Subtracting Polynomials | Homework 3-Combining Polynomials | Section 5.15.1: 1 -3, 8 -10, 15,16, 22, 25 | Chapter 7:1 - 3 Chapter 8: 1 - 3  |
| 4 | Chapter 5:Properties of Positive Exponents/ Multiplying Monomials | Homework 4-Exponents & Multiplying Monomials | Sections 1.2, 4.1 & 5.11.2: 5 -29 odd4.1:1 -31odd5.1: 5,7, 11, 13 17 -35 odd | Chapter 5: 1 – 6, 9a, 10a  |
| 5 | Chapter 9:Multiplying Polynomials | Homework 5-Multiplying Polynomials  | Sections 4.2- 4.44.2: 1 – 15 odd4.3:1,3, 9-15 odd,19 -25 odd,29, 304.4: 1 – 9 odd | Chapter 9: 1-4,6  |
| 6 | Chapter 10:Division of Polynomials & Review Polynomial Operations  | Homework 6-Operations with PolynomialsStudy for Exam  | Section 8.11 – 15 odd, 31 | Chapter 10: 1, 2  |
| 7 | **Exam 1** & Chapter 15:Checking Solutions of First-Degree Equations | Homework 7-First Degree Equations | Section 7.1 1 – 11 odd 15, 17 | Chapter 15: 1- 5 |

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| 8 | Chapter 16:Solving First Degree Equations | Homework 8-First Degree Equations | Section 7.2 1 -31 odd(Optional 7.3 ex 1 -15 odd) | Chapter 16: 1, 2  |
| 9 | Chapter 17:Solving Rational Equations | Homework 9- Solving Rational Equations | Section7.41 – 3 odd, 18, 21, 23 | Chapter 17:  9, 10  |
| 10 | Chapter 19:Solving Literal Equations | Homework 10-Solving Literal equations | Section 7.5 1 –27 odd,  | Chapter 19:  1- 11  |
| 11 | Chapter 21:Solving Inequalities | Homework 11-Solving Inequalities | Section 7.71- 7 odd, 13, 19, 23 -29 odd, 37, 39 | Chapter 21: 1  |
| 12 | **Exam 2** & Chapter 18:Verbal Problems – Number & Proportion | Homework 12- Verbal Problems IProportion & Number  | Sections 12.1 & 12.32.1: 1 -9odd12.3: 1 -13 odd  | Chapter 18: 1, 4, 5  |
| 13 | Chapter 18:Verbal Problems – Distance & Percent (optional) | Homework 13—Verbal Problems II -distance (percent) | Section 12.4 3 – 7 all& (12.2) | Chapter 18: 6, 7, 9, 10  |
| 14 | Chapter 12:Greatest Common Factor & Factoring by Grouping | Homework 14-GCG and Grouping | Sections 6.1-.2 & 6.86.1: 1-17 odd6.2: 1 – 23odd6.8: 1 -21 odd | Chapter 12: 1- 5  |
| 15 | Chapter 13:Factoring -Difference of Perfect Squares – include GCF | Homework 15-Diff. of Perfect Squares | Sections 6.3 & 6.46.3:1 -17 odd, 21 256.4: 1 -13 odd, 25 ,29 | Chapter 13:1, 2a-g  |
| 16 | Chapter 14:Trinomial Factoring a = 1 and not = 1 | Homework 16- Trinomials | Sections 6.5 & 6.66.5: 1-21 odd6.6: 1 -17 odd | Chapter 14: 1,2  |
| 17 | Chapter 14:Review Factoring Methods | Homework 17-All Factoring | Sections 6.7 & 6.96.7: 1- 15 odd6.9: 1-33 odd | Chapter 14: 3- d |
| 18 | **Exam 3 &** Chapter 20:Solving Quadratic Equations | Homework 18-Solving Quadratics | Section 7.61-5 odd, 11 -29 odd | Chapter 20:1, 2a -b |
| 19 | Chapters 25 & 26:Graphing Lines & Determining the slope and y-int. | Homework 19-Graphing Points & Lines. | Sections 10.1 & 10.410.1: 1-5 odd, 15, 17 & 1910.4: 1 – 15 odd | Chapter 25:2 - 5Chapter 26: 3- 7  |
| 20 | Chapter 26:Writing the Equation of a line passing through two given points | Homework 20-Finding the equation a line | Section 10.41 – 35 odd | Chapter 26: 10- 14 |
| 21 | Chapters 27 & 28:Solving a system of Linear Equations – Graphically & Algebraically | Homework 21- Solving Systems of Linear Equations | Sections:11.1, 11.2 & 11.3 | Chapter 27: 1 - 3 Chapter 28: 2 |
| 22 | Chapter 22:Simplifying a Rational Expression by Factoring | Homework 22-Simlifying Rational Expressions | Section: 8.1 ex. 17 – 32 all | Chapter 22: 1  |
| 23 | **Exam 4** & Chapter 22:Multiplying and Dividing Rational Expressions | Homework 23- Mult. & Dividing Rational Expressions | Sections: 8.2 & 8.3 | Chapter 22: 2,3a-d, 4  |
| 24 | Chapter 23:Combining Rational Expressions | Homework 24-Combining Rational Expressions | Section:8.4 | Chapter 23: 1, 2  |
| 25 | Chapter 11:Simplifying and Combining Square Roots & thePythagorean Theorem | Homework 25-Simplifying Square Roots &Combining  | Sections:9.2 and 9.5 | Chapter 11: 1a - g, 2, 4  |
| 26 | Chapters 11 & 20:Multiply & Divide Square Roots (no rationalizing the denominator)  | Homework 26-Mult. & Dividing Sq. Roots & Pythagorean Th. | Sections: 9.3, 9.4 and 9.1 | Chapter 11: 6 – 8, 10, 11a – f, 12 Chapter 20: 3 - 5 |
| 27 | **Exam 5**/ Review | Examples from:1R, 2R | Examples from 1R, 2R | Examples from 1R, 2R |
| 28 | Review | 3R | 3R | 3R |
| 29 | Final Exam |  |  |  |
| 30 | CEAFE |  |  |  |