

Revised Fall 2009

ARAPAHOE COMMUNITY COLLEGE SYLLABUS

Course Number: MAT 090 **Title:** Introductory Algebra **Credits:** 4

Instructor:

Phone:

E-mail:

Office Location (if applicable):

Office Hours (if applicable):

Important Dates:

Last day to drop with refund (include date):

Last day to withdraw without refund (include date):

Catalog Description:

This course includes solution of first-degree equations, inequalities, and formulas; polynomials; algebraic fractions, factoring polynomials, solving quadratic equations by factoring, and applications. Coordinate geometry; graphing linear equations and inequalities; and system of linear equations may be included.

Prerequisite: Successful completion of Math 060 (grade C or better) or achieved an Accuplacer score of 45-60 in Elementary Algebra

Co-requisite: None

Text: Beginning Algebra, 2nd edition, by Miller, O'Neill and Hyde; McGraw-Hill Higher Education

Required Course Materials: Text, graph paper, and a scientific or business calculator.

Optional Course Materials: Student Solutions Manual may be purchased from the bookstore.

Calculator Skills: Students are required to do signed number arithmetic, operations with fractions and correct order of operations by hand. Students are required to check their arithmetic on the calculator, using appropriate parentheses when necessary. Calculator skills are useful and required for further math study.

Student Learning Outcomes:

1. Demonstrate knowledge and usage of first-degree equations, inequalities and formulas.
2. Demonstrate knowledge and usage of polynomials.
3. Demonstrate knowledge and usage of factoring and solving quadratic equations by factoring.
4. Demonstrate knowledge and usage of coordinate geometry.
5. Demonstrate knowledge and usage of algebraic fractions.
6. Demonstrate knowledge and usage of linear systems.

Grading Criteria:

Makeup Policy:

Attendance Policy:

Other Information:

Please note your Arapahoe.edu e-mail address is the official means of communication between you and the college. If you have not done so, please go to the ACC home page to activate your e-mail account.

All classes will be evaluated online (rather than by using paper and pencil) this year. Please provide feedback for all of your classes

Student Success Center for all ACC students: Student Success Center for all ACC students: Peer and professional tutoring in Room M2720 now includes student tutors, math support, and the Writing Center in one location to provide academic assistance for all your classes.

ACC math instructors provide help with concepts, homework, online resources and graphing calculator workshops. Students may watch course related videos and DVDs in the library. For information, contact the Student Success Center at 303-797-5669 or email Mathhelp@arapahoe.edu.

Online Course Evaluations: As this course nears completion, you will have the opportunity to complete a confidential evaluation of the class online. Login instructions will be sent to your 'student.cccs.edu'

e-mail address. Your feedback is important, and ensures that ACC continues to offer quality instruction that meets your needs. Please take time to complete the survey – I appreciate your feedback.

E-mail Communication: Effective 1/20/09 electronic correspondence from ACC employees will go to your student email account *only*. When you activate your account you can forward emails to an e-mail account that you already have. To activate your student e-mail account, go to <http://www.arapahoe.edu> and click on the “Activate Student E-mail” link. Questions? Please call 303-797-5621

Student Support Services: Arapahoe Community College provides accommodations to qualified students with disabilities. To request accommodation, contact Disability Services in M2710 or call (303) 797-5937 v/tty.

Please refer to the college catalog for policies on academic integrity, plagiarism, student code of conduct, student grievance procedures, etc.

Academic Honesty Statement

Arapahoe Community College is committed to academic honesty and scholarly integrity. The College can best function and accomplish its mission in an atmosphere of the highest ethical standards. All members of the College community are expected and encouraged to contribute to such an environment by observing all accepted principles of academic honesty. Academic dishonesty includes but is not limited to: **plagiarism, cheating, fabrications, grade tampering, misuse of computers and other electronic technology, and facilitating academic dishonesty.** Those found in violation may also be subject to potential disciplinary sanctions under the Arapahoe Community College Code of Conduct OR “Those found in violation of academic honesty will be subject to the following disciplinary actions:

Safety and Security

The safety and security of all our students, faculty, staff and visitors is of the utmost importance to the Campus Police Department. We rely on each of you to be an additional set of ears and eyes to help maintain campus safety. Please be diligent in your efforts to report suspicious or unusual behavior or circumstances to the Campus Police Department. Trust your instincts when something doesn't look, seem or feel right and tell someone. The Campus Police can be reached at 303.797.5800 or in M2600 on the second floor behind Information

Central. Additional safety information can be found on the website at <http://www.arapahoe.edu/studentsvcs/campuspolice/index.html>

Contact Information for Learning Support Services

Library	M250 0	303.797.509 0
Student Success Center	M272 0	303.797.566 9
Technical Support		303.797.570 0 x3199
Advising/Counseling	M201 0	303.797.565 1
Instructional Testing Center	M228 0	303.797.599 3
Bookstore	M120 0	303.797.567 6
Computer Lab	M165 0	303.797.590 7
Career Center	M202 5	303.797.580 5
eLearning	M165 0	303.797.570 0 x6700

Topical Outline:

Chapter 1: Set of Real Numbers

- 1.1 Sets of Numbers and the Real Number Line
- 1.2 Order of Operations
- 1.3 Addition of Real Numbers
- 1.4 Subtraction of Real Numbers
- 1.5 Multiplication and Division of Real Numbers
- 1.6 Properties of Real Numbers and Simplifying Expressions

Chapter 2: Linear Equations and Inequalities

- 2.1 Addition, Subtraction, Multiplication and Division Properties of Equality
- 2.2 Solving Linear Equations
- 2.3 Linear Equations: Clearing Fractions and Decimals
- 2.4 Applications of Linear Equations: Introduction to Problem Solving
- 2.5 Applications Involving Percents
- 2.6 Formulas and Applications of Geometry
- 2.7 Linear Inequalities

Chapter 3: Graphing Linear Equations in Two Variables

- 3.1 Rectangular Coordinate System
- 3.2 Linear Equations in Two Variables
- 3.3 Slope of a Line

3.4 Slope-Intercept Form of a Line

3.5 Point-Slope Formula

3.6 Applications of Linear Equations

Chapter 4: Systems of Linear Equations and Inequalities in Two Variables

4.1 Solving Systems of Equations by the Graphing Method

4.2 Solving Systems of Equations by the Substitution Method

4.3 Solving Systems of Equations by the Addition Method

4.4 Applications of Linear Equations in Two Variables

4.5 Linear Inequalities in Two Variables

4.6 Systems of Linear Inequalities in Two Variables

Chapter 5: Polynomials and Properties of Exponents

5.1 Exponents: Multiplying and Dividing Common Bases

5.2 More Properties of Exponents

5.3 Definitions of b^0 and b^{-n}

5.4 Scientific Notation

5.5 Addition and Subtraction of Polynomials

5.6 Multiplication of Polynomials

5.7 Division of Polynomials

Chapter 6: Factoring Polynomials

6.1 Greatest Common Factor and Factoring by Grouping

6.2 Factoring Trinomials of the Form $x^2 + bx + c$ (optional)

6.3 Factoring Trinomials: Trial-and-Error Method

6.4 Factoring Trinomials: AC Method

6.5 Factoring Binomials

6.6 General Factoring Summary

6.7 Solving Equations Using the Zero Product Rule

Chapter 7: Rational Expressions

7.1 Introduction to Rational Expressions

7.2 Multiplication and Division of Rational Expressions

7.3 Least Common Denominator

7.4 Addition and Subtraction of Rational Expressions

7.5 Complex Fractions

7.6 Rational Equations

7.7 Applications of Rational Equations and Proportions

7.8 Variations