

Revised Summer, 2009

ARAPAHOE COMMUNITY COLLEGE SYLLABUS

Course Number: MAT 155

Title: Integrated Math I

Credits: 3

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 class covers topics including natural numbers, integers, rational numbers, relations, functions, and equations. This course is the first of a two-course sequence particularly pertinent to prospective arithmetic teachers, presenting arithmetic and algebra from a modern approach.

Prerequisites: A grade of C or better in MAT 106, Survey of Algebra or an equivalent competency.

Required Text: Bennett, Albert B, Jr, and Nelson, L. Ted, *Mathematics for Elementary Teachers, A Conceptual Approach*, (Eighth Edition), and *Mathematics for Elementary Teachers An Activity Approach*, (Eighth Edition), and accompanying *Manipulative Kit*, Boston: McGraw Hill.

Optional Texts: Musser, G. L. and Burger, W. F. (2001). *Mathematics for Elementary Teachers: A Contemporary Approach (5th Ed.)*. New York: Macmillan.

Van de Walle, J. A. (2001). *Elementary and Middle School Mathematics: Teaching Developmentally (4th Ed.)*. White Plains, NY: Longman. These are in the ACC library.

Required Course Materials: A clear plastic ruler, graph paper, and a scientific calculator; i.e. a calculator that can handle numbers in scientific notation and has [y_x], [π], and [$!$] keys. (The Texas Instruments Explorer Plus or TI-34 II, or another calculator with a [$a_{b/c}$] key is recommended.)

Grading Criteria:

Makeup Policy:

Attendance Policy:

Other Information:

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.

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

Please refer to the college catalog for policies on: (Academic Integrity, Plagiarism, Student Code of Conduct, Student Grievance Procedure, etc.)

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: 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

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, fabrication, 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.

Competencies: At the end of the semester, a successful student should be able to:

- I. Investigate numerical and geometric patterns and express them mathematically.
 - A. Generalize from specific patterns to more abstract principles
 - B. Apply abstract patterns to specific situations.
- II. Solve problems requiring the learner to utilize relevant knowledge by means of numerical and graphical strategies. The learner will select and develop plans, make decisions, evaluate and communicate the results.
- III. Solve problems using algebraic thinking skills.
- IV. Investigate the concepts of logic.
 - A. Apply logical reasoning to everyday situations
 - B. Write formal or informal proofs using truth tables
 - C. Post logical arguments and find the fallacies in illogical arguments.
- V. Solve problems using set theory.
- VI. Utilize number theory to examine and solve problems involving real numbers as well as different numeration systems.
- VII. Represent and analyze relations and functions, using words, tables, equations, and graphs. Generalize from detailed examples to the broad concepts and vice versa.

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	M2500 303-797-5090
Technical Support	303-797-5700 x3199
Student Support Services – Peer and Professional Tutoring	M2720 303-797-5669
Advising/Counseling	M2010 303-797-5651
Instructional Testing Center	M2280 303-797-5993
Bookstore	M1200 303-797-5676
Computer Lab	M1650 303-797-5907
Career Center	M2025 303-797-5805
eLearning	M1650 303-797-5700 x6700

Material covered in class:

Chapter 1: Problem Solving

- Section 1.1 Introduction to Problem Solving
- Section 1.2 Patterns and Problem Solving
- Section 1.3 Problem Solving with Algebra

Chapter 2: Sets, Functions and Reasoning

- Section 2.1 Sets and Venn Diagrams
- Section 2.2 Functions and Graphs
- Section 2.3 Introduction to Deductive Reasoning

Chapter 3: Whole Numbers

- Section 3.1 Numeration Systems
- Section 3.2 Addition and Subtraction
- Section 3.3 Multiplication
- Section 3.4 Division and Exponents

Chapter 4: Number Theory

- Section 4.1 Factors and Multiples
- Section 4.2 Greatest Common Divisor and Least Common Multiple

Chapter 5: Integers and Fractions

- Section 5.1 Integers
- Section 5.2 Introduction to Fractions
- Section 5.3 Operations with Fractions

Chapter Six: Decimals, Rational and Irrational Numbers

- Section 6.1 Decimals and Rational Numbers
- Section 6.2 Operations with Decimals
- Section 6.3 Ratio, Percent, and Scientific Notation
- Section 6.4 Irrational and Real Numbers

