

Revised Summer, 2009

ARAPAHOE COMMUNITY COLLEGE SYLLABUS

Course Number: MAT 156

Title: Integrated Mathematics II

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 course furthers MAT 155 concepts. It will include fundamentals of probability, statistics, and Euclidean geometry. Mathematical problem-solving, reasoning, critical thinking and communication will continue to be an integral part of this sequence.

Prerequisites: Successful completion of MAT 155 Integrated Math I (grade C or better).

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.

Required Course Materials: Pens (no pencils!), 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], [p], 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: 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.

The Math Department offers math support services (including tutoring, computer and calculator support, and other services) through the Mathematics Support Room in M3610. Please take advantage of this great opportunity to study with experienced tutors (generally faculty members) and your fellow classmates AND to obtain unlimited access to the math software we will be using in class.

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.ccs.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.

CCNS Competencies:

- I. Solve problems involving probability
 - A. Determine the probability of outcomes of single and multi-stage experiments
 - B. Determine the probability of an event involving conditional probability
 - C. Determine the odds in favor of an event
- II. Solve problems involving elementary statistical concepts
 - A. Interpret and draw a variety of statistical graphs
 - B. Determine the central tendencies and measures of variation for a collection of data
 - C. Recognize abuses of statistics
- III. Solve problems involving elementary geometrical concepts
 - A. Apply the concepts of point, line, and plane
 - B. Apply the concepts of parallel lines, perpendicular lines, and skewed lines
 - C. Distinguish between different types of curves
 - D. Solve problems involving angle measurement
 - E. Identify and draw 3-dimensional geometrical shapes
- IV. Solve problems involving the concepts of congruence and similarity
 - A. Apply the concept of congruent triangles to constructions
 - B. Construct parallel lines, perpendicular bisectors, and angle bisectors
 - C. Inscribe a regular polygon in a circle
 - D. Solve problems involving similar triangles.
- V. Solve problems involving applications of motion geometry and tessellations
 - A. Find the image of geometrical shapes under various translations and rotations
 - B. Find the image of geometrical shapes under various reflections, glide reflections, and size transformations given a scale factor
 - C. Determine types of symmetries for various geometric shapes
 - D. Tessellate a plane

Sections covered in the text book:

Chapter 7 Statistics

- Section 7.1 Collecting and Graphing Data
- Section 7.2 Describing and Analyzing Data
- Section 7.3 Sampling, Predictions and Simulations

Chapter 8 Probability

- Section 8.1 Single Stage Experiments
- Section 8.2 Multistage Experiments

Chapter 9 Geometric Figures

- Section 9.1 Plane Figures
- Section 9.2 Polygons and Tessellations
- Section 9.3 Space Figures
- Section 9.4 Symmetric Figures

Chapter 10 Measurement

Section 10.1 Systems of Measurement

Section 10.2 Area and Perimeter

Section 10.3 Volume and Surface Area

Chapter 11 Motions in Geometry

Section 11.1 Congruence and Constructions

Section 11.2 Congruence Mapping

Section 11.3 Similarity Mappings