MAT 121 – College Algebra Fall Semester, 2015
Section G-11

INSTRUCTOR: Dr. Harry S. (Steve) Mills, EDBH 134K, 970-339-6238, E-mail: Use mail tool on MyAims course website. (Click on Classlist from the main Navigation bar and then click on "Mills, Harry.") Emergency e-mail: steve.mills@aims.edu

IMPORTANT: The student is responsible for reading, understanding, and complying with all Standard Syllabus Policies (http://www.aims.edu/inside/policies/standard-syllabus/), unless otherwise stated, below.

MAILING ADDRESS:
Harry Mills
EDBH 134K
Aims Community College
5401 W. 20th Street
Greeley, CO 80632

Catalog Description: Includes equations and inequalities, functions and their graphs, exponential and logarithmic functions, linear and non-linear systems, graphing of the conic sections, introduction to sequences and series, permutations and combinations, the binomial theorem, theory of equations and an introduction to matrices and determinants. 4 credit hours

Prerequisites: Prerequisite(s): MAT 055 or higher (except MAT 090, MAT 103, MAT 107, MAT 108, MAT 109, MAT 112, and MAT 120), with grade of C or better, (except MAT 135 or BUS 226 - minimum grade of B or better) or assessment test. Registration in lab class MAT 093 may also be required depending on assessment score. Four credits.

Required Materials:
• **Textbook: College Algebra**, 6th Edition, Dugopolski.

• **Scientific Calculator:** The TI 30X IIB or comparable product with a Previous Entry feature is preferred. When you can see what you entered, you'll make fewer mistakes, be able to fix any mistakes you make, and explore patterns, by changing one thing in a big formula, and seeing how the output changes, without having to re-enter the whole long expression. What you want is a calculator just one step below a graphing calculator, that lets you edit the entries like you do in a graphing calculator.
GRAPHING CALCULATORS ARE NOT PERMITTED ON TESTS, ALTHOUGH ELECTRONIC GRAPHING WITH ONLINE GRAPHERS OR GRAPHING CALCULATORS MAY COME UP ON THE HOMEWORK.

Course Website: To access the website, set your web browser location to http://www.aims.edu and click on the My Aims link on the upper right of the page, and click on STUDENT tab. From that window, the Aims Online link is a big panel on the left of the screen. Click on that, and select this course (College Algebra) from the links on that page. You may need to set the semester popup list to the current semester.

Pearson MyLab and Mastering Website: This learning tool offers video lectures, exercises, and on-demand help. It's one option for doing homework that I want to be available to you, but you can also just do homework the old, paper-and-pencil way, as well.

Grades: Three Categories: Tests, Homework, Final Test.

• **Test Average** will count 60% of the final grade. (Replace the lowest of these with your Final Exam grade.). Tests generally cover one chapter, each.

• **Homework** will count 20% of the final grade. Homework is assigned through Pearson Learning, and MyMathLab will deliver instruction, tutorials, and generate as many examples as you ask. This is a small fraction of the points, but the bread and butter of the course. It's where you *learn* this stuff.

• **Final Test** will count 20% of the final grade.

Grading Scale: 90% - 100% A 80% - 89% B 70% - 79% C 60% - 69% D

How to Operate: My biggest thing, early, is to clear away the distractions, and keep you focused on the fast path to completion. There are *many* resources available, but only a minimum number of activities that I *require*.

1. Carve out 12 hours per week, to begin with. 3 hours a day, 4 days a week is typical face-to-face schedule, with 4 of those hours in class, and 8 hours out of class. Most students will find that some weeks, it takes more time, due to brushing-up on skills that may be rusty.
2. Focus on keeping up with the Chapter homework. You need to keep up with the test schedule

Stop-Out: Students who are inactive for 2 weeks will be reported as Stop-Out and dropped from the roster.

General Education Competencies: This course satisfies the following General Education competencies: Critical Thinking, Technology, and Mathematics. It also satisfies the Aims requirement for Writing. Refer to Aims Community College catalog for descriptions.

Learning Outcomes:

A. Be familiar with set notations, subsets of the real numbers and properties of real numbers.
B. Perform algebraic manipulations including working with exponents, radicals, polynomial operations, factoring and algebraic fractions.
C. Solve the following types of equations: linear, quadratic, equations involving radicals, equations in quadratic form and equations involving absolute value.
D. Work with formulas including formula evaluation and solving a formula for any of the variables.
E. Read and analyze problems in the form of word problem applications and obtain solutions using equations.
F. Solve first degree inequalities, higher degree inequalities and inequalities involving absolute value.
G. Recognize and graph linear functions, rational functions, absolute value functions, and graph inequalities in two variables.
H. Work with function notation and demonstrate knowledge of the meaning "function".

I. Demonstrate an understanding of function composition, one-to-one functions and inverse functions.
J. Evaluate and graph exponential functions.
K. Evaluate and graph logarithmic functions.
L. Work problems and solve equations containing exponential and logarithmic functions.
M. Use at least two of the following techniques to solve linear and non-linear systems of the equations: substitution, addition, Gaussian elimination, Cramer's rule.
N. Have some familiarity with matrices and operations involving matrices.
O. Graph systems of inequalities.
P. Graph conic sections including circles, parabolas, ellipses and hyperbolas.
Q. Identify the conic section represented by a given second degree equation.
R. Work with series notation and sequence formulas, and counting principles.
S. Apply the Binomial Theorem.
T. Demonstrate an understanding of proof by mathematical induction.
U. Present topics in theory of equations.
V. Perform synthetic division.
W. Use the Remainder Theorem and the Factor Theorem to factor and evaluate polynomials.
X. Solve polynomial equations using the Rational Root Theorem and/or approximation techniques.
Y. Write and speak clearly and logically about topics related to algebra.
Z. Demonstrate the ability to select and apply contemporary forms of technology to solve problems or compile information in the study of algebra.

Tutoring Information: Drop-in, individual, and guided study group tutoring is available to currently enrolled Aims students. For available subjects, hours, and additional questions, please call 339-6541 for Greeley, 667-4611 Ext. 3304 for Loveland, and 303-718-5905 for Fort Lupton services. Also, please visit our website at http://www.aims.edu/student/learning-commons/tsi/index.php for current information.

Students with Disabilities: Any student who feels s/he may need an accommodation based on the impact of a disability should contact the Disability Access Services (DAS) office privately to discuss her/his specific needs. Please be aware that before accommodations can be made, they must be approved through the DAS office. Students should contact the DAS office at 970-339-6388 or disabilities@aims.edu to set up an appointment to discuss the process of requesting reasonable accommodations. DAS is located in the College Center in the One-Stop Shop area on the 1st floor.

Student Conduct and Civility Statement: *Let common sense and common courtesy prevail!*
If they do *not* prevail, the student will be held to the letter and spirit of our Student Conduct Policy, which is discussed here:

http://www.aims.edu/student/conduct/code-of-conduct?expanddiv=item1#expectations
Again, standard syllabus information is found here:
http://www.aims.edu/inside/policies/standard-syllabus/

Makeup Tests, Deadlines and such: Late tests will not be given. If you miss one test, that test score will be replaced by your Final Test score. I reserve the right to make exceptions, but it's *very* difficult to get an exception, with lots of documentation and/or *unanimous* consent of *all* your classmates!

The Final Test date and time to be announced

I'm generally fairly loose on homework deadlines. As I provide solutions, it's about your learning more than trying to stick it to you on the points. The last homework assignment before the exam is usually collected the day of the test, so I don't have my grubby paws on it, when you're doing your last-minute test preps.