

**MAT 121 –College Algebra  
Section G12**

**Fall Semester, 2012**

**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.")  
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**Class Time and Place:** 10:10 – 11:00 a.m., MTWF, EDBH 131

**Catalog Description:** Includes a brief review of intermediate algebra, equations and inequalities, and covers functions, exponential and logarithmic functions, theory of equations, graphs, and linear and nonlinear systems with a selection of several topics from among graphing of the conic sections, sequences and series, permutations and combinations, and the binomial theorem. This course is a state guaranteed transfer course GT-MA1. Prerequisite(s): MAT 099 or assessment. Four credits.

**Prerequisites:** Completion of MAT 099 with a 'C' or better, ACT Math score greater than or equal to 23, or assessment score.

**REQUIRED MATERIALS:**

- **Textbook:** College Algebra by Dugopolski, 5<sup>th</sup> Edition, ISBN 9780321644749 . There are at least three options, here:
  - buy the book at the College Bookstore (\$168.25 new, \$126.25 used), or
  - register online @ <http://pearsonmylabandmastering.com> . The Course ID is **mills32233**, (\$86.50 for access to all the online resources, including an *e*-book). There is a [Get Started Video](#) that fills you in on all the details on this method. Many students will benefit from the 17-day Free Trial Offer, so they can explore it before deciding if they want to pay for it.
  - There's also the Amazon.com option, etc., although if you haven't gone this route, yet, you need to hustle.
- **Scientific Calculator:** This is the calculator you will be allowed (required) to have for tests. No calculator, no excuse. No other electronic device allowed on tests. The TI 30X IIB or comparable product with a **Previous Entry feature** is a nice tool. When you can see what you entered, you'll make fewer mistakes, be able to fix any mistakes you make, and explore patterns, when a particular problem involves turning the crank 5 or 6 times on the same exact formula, with maybe one number changed. **A GRAPHING CALCULATOR, SMARTPHONE OR ANY OTHER ELECTRONIC DEVICE IS NOT PERMITTED ON MIDTERM OR FINAL TESTS!!!**
- **Course Website:** To access the website, login to <http://www.aims.edu> and click on My Courses tab. Then click on College Algebra. The website is a central location for finding this syllabus, and other resources, including .

**OPTIONAL MATERIALS:**

- [PearsonMyLabandMastering.com](http://pearsonmylabandmastering.com) account. The cheapest option to have access to everything in the text *and* the online homework. Not all students will want to fiddle with the computer

interface, and some students (I'd be one.) prefer to have the actual hardcover book in their hands. You *young* people might find that just having it on your laptop is the easiest way to take it with you everywhere you go. I get it. Sort of.

- Graphing Calculator capability – This can take the form of your standard hand-helds, like TI-83 or TI-84, all the way up to *Maple* or *Mathematica* or *Matlab*. And then there are all the possible apps that are out there for smartphones, that, *although they are prohibited on Midterm and Final, can be VERY useful for helping on homework, weekly quizzes, and practice tests.*

**Grades:** Three categories: Learning Activities (40%), Midterm Test (30%), and Final Test (30%).

- **Midterm Test:** 30% of the overall grade. Closed-book. A pair of 1-hour tests, back-to-back, in the middle of the semester, covering all topics, to that point in time. The 2<sup>nd</sup> hour will always contain the latest material, to give an extra day to absorb the latest material.
- **Final Test:** 30% of the overall grade. Closed-book. A single, 2-hour test, at the end of the semester, *also* covering all topics, to that point in time.
- **Learning Activities:** 40% of the overall grade. Drop the lowest Quiz While you *must* take the Weekly Quizzes, the other activities only figure in if you score higher on those categories than you do on your Weekly Quizzes.
  - **Weekly Quizzes (Mandatory):** Taken directly from the hardcover text's assigned problems. This keeps everyone up to the baseline standard on a weekly basis. Drop the lowest grade (This gives you one free makeup, without my having to do any extra work.)
  - **Online Homework (Optional):** An online version of the assigned homework problems. This is the PearsonMyLabandMastering stuff I keep talking about. Homework will be averaged over ALL assignments, with your total homework points (10 pts per assignment) divided by 85% of the total homework points that are available. By "optional," I mean that only if your overall homework grade exceeds your Weekly Quizzes grade, will it be figured in to your overall Learning Activities grade.
  - **Practice Tests (Optional):** At the end of each chapter (roughly), a test will be given in-class, worked on together, and turned in at the beginning of the *next* class. I'll grade it like it was a real test, and award a 100% 'A' if you earned a 70% or better, and give you a 75% 'C' if you turned it in on time but earned less than a 70% score. Everyone should *take* these, and *almost* everyone will want this category figured into their Learning Activities grade, because it's a great learning tool, and 'most everyone can easily max it out.
  - **Writing Projects (Optional):** One work of reflective writing related to that chapter's contents. I *require* this of my online students, most of whom report that the writing project is what makes sense of the concepts they're learning. But not *all* students, so if it helps and you like doing it, then *great*. Otherwise, at least it's not going to *hurt* your grade.

**Grading Scale:**

90% - 100% A

80% - 89% B

70% - 79% C

60% - 69% D

**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 most accommodations can be allowed in class they must be approved through the DAS office. Students should contact the DAS office at 970-339-6388 or [disabilities@aims.edu](mailto: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 Section 5, Subsections 600 (Discipline) and 601 (Rights and Responsibilities) of the Aims Policy and Procedures Manual, and Aims and I will take all appropriate actions to secure a safe and courteous learning environment for everybody. Nothing less will be tolerated. Details may be found at

<http://www.aims.edu/inside/policies/manual/policyProcedure.pdf>

(Scroll down and select #5-600 and #5-601 for full descriptions.)

**My Weekly Schedule:**

	<b>Monday</b>	<b>Tuesday</b>	<b>Wednesday</b>	<b>Thursday</b>	<b>Friday</b>
<b>7:10 – 8:00</b>					
<b>8:10 – 9:00</b>		Office	Prep	Prep	
<b>9:10 – 10:00</b>		Office	Office		Office
<b>10:10 - 11:00</b>	121	121	121		121
<b>11:10 - 12:00</b>	Office	Office	Office	Office	Office
<b>12:10 - 1:00</b>	201	201	201	201	201
<b>1:10 – 2:00</b>	Office	Prep	Prep	Office	
<b>2:10 – 3:00</b>				Prep	
<b>3:10 – 4:00</b>					

Appointments are available if you can't make my office hours. If I start getting regular appointments at unlisted hours, I reserve the right to modify this schedule. Hours marked "Office" are times I set aside for students, specifically.

Office hours are set up to get 'most everyone help before or after class meets, to help those who are commuting to class with their schedules. I'm also setting office hours on Tuesday and Thursday, for students who have that block of time open, otherwise.

Any time you drop by and I'm in my office, I'm usually ready to help you with questions, and I'm in and around the office most of the day.