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Standard Policies and Services: Please see the Aims Standard Syllabus Policies (http://www.aims.edu/inside/policies/standard-syllabus/). This is where you and I go, in special or extraordinary circumstances, when extra guidance is needed on college policy. This helps us to keep this MAT 121 Syllabus on MAT 121.

Students who are *honest, and show common courtesy and common sense*, will never have to go to the Standard Syllabus's Student Conduct section. If you have a documentable disability, you really want to check out what our Disability Services has to offer.

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. There are options for the book.

- You can buy it bundled with MyMathLab access code (New Books Only)
- You can buy it used.
- You can just buy access to the eBook, by purchasing MyMathLab access, direct from the Pearson Website.
- There's a looseleaf version of the textbook that's cheaper than the hard-back book.

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: Log in to Aims Online (https://online.aims.edu/). Navigate to this class.

MyMathLab: For an on-demand experience, access the homework, help and video instruction available in Pearson MyLab and Modified Mastery (http://www.pearsonmylabandmastering.com/). It is integrated with all the homework exercises I have assigned for the course. To get started on MyLab, right now, go to Pearson Get Started (http://www.harryzaims.com/121-all/pearson/Register-for-MyLab.pdf/).

MyMathLab is how you will work and submit your homework. REQUIRED for online version of this course.

Optional Materials:

Home-made Video: Virtually every problem I've assigned, for the semester, is worked, by me, on a video. I keep all those videos in my Videos Directory (http://www.harryzaims.com/121-all/videos/). Sometimes the **numbers** are different, but yeah, I pretty much have worked every exercise, if you get stuck, and want to ask about it. BOOM! There's my 5-minute spiel on the problem.

Graphing Calculator: While we're denying their use on tests, a graphing calculator, or graphing app on your smartphone, or one of the many free online graphers, available online, *must* be used, to do some of the explorations that come up in the homework. You'll want to use whatever works for you, but you will need some standard graphing calculator capabilities for some of the assigned exercises.

Grades: Four Categories: Tests (60%), Homework (20%), Writing Projects (10%), Weekly Essays (10%).

Tests: Tests will count 60% of the final grade. I've done away with a heavy-weight, comprehensive final, for this semester. 5 tests. The Final Test will be lumped in with all the rest of your tests, for grading purposes. The Final Test *is* comprehensive, as are *all tests in this course*, so questions or problems from the previous tests are all fair game on any future test. I especially like to include problems from previous tests that many in this class struggled with. You know the ones you need to make sure you can work, and I get to see the class master a problem area.

Special: You may replace the lowest of your first 4 tests with your final test score. If you *miss* a test, that will be how it is handled. If you miss a 2nd test, well, we're going to have words. Heh. Seriously, a Makeup Test will require a documentable reason, and be at my discretion.

The **Final Test** is Test 5, with a deadline of Wednesday, December 7th.

Makeup Tests, Deadlines and such: Makeup tests generally require a college-excused absence. I reserve the right to make exceptions, but it's very difficult to get an exception, and they tend to receive only half-credit. Being lax on this is disrespectful to every student who shows up at the appointed time and place.

Homework: I have compiled a list of all the assigned problems for this semester.
(http://www.harryzaims.com/121-all/homework-assignments/). You should write up your homework, for future reference and to just master the concepts, better. But all the homework is done on MyMathLab for this online section of the course.

10% is a small fraction of the total points, but the bread and butter of the course. It's where you *learn* this stuff.

The deadline on everything for the Online Homework Option is the day you take the final. That's when I go in, one last time, and see what you've accomplished, between August and December.

Writing Projects: There are three (3) Writing Projects.
(http://www.harryzaims.com/121-all/videos/03-Writing-Projects/)
I wouldn't worry too much about them, the first week. They're generally due in the run-up to the chapter test for the relevant chapter. Like a "super" homework assignment that ties things together better than the book, alone, or the MyLab, alone. Writing Projects are due when you come take your test over the material the project covered.

Weekly Essays: I want you to drop me a line, every week in the Discussions. Each week, there will be a new Weekly Essay blog open up. This is less about hard work than consistently checking-in and interacting with us. And I've created a place for you to do that, and to share thoughts (questions/ideas) with the rest of the class. When in doubt about what's required, here's a fallback plan:

- What did I learn this week?
- What did I struggle with this week?
- In general, how are things going?

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 a 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 or less time, due to brushing-up on skills that may be rusty, or because a new concept is more or less difficult for the student.

2. Focus on keeping up with the Chapter homework. You need to keep up with the test schedule.

3. There are optional assignments in Chapter P, for "prerequisite." I'm in the process of prepping videos for those problems. All the rest of the assignments have video sets from me, as well as whatever help you can find on Pearson site, or elsewhere. This material could be useful, if you need to brush up on a topic.

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.