University Of New Mexico – Valencia Campus
Department of Science & Mathematics
MATH 121-Sec. 502 (CRN # 22945)
College Algebra
Fall 2010

Instructor: Khaled Kassem **(Mr. K) Email:** khaled@unm.edu

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Class Schedule: Monday & Wednesday @ 03:00 – 04:15PM - **A-129**

Office Room: A-107

Office Hours: Monday & Wednesday: 04:15 -05:45PM
Tuesday& Thursday: 11:45AM-01:00PM & 02:15-03:00PM
MY MATH LAB COURSE ID #: kassem15329

Class Format:

This course will be taught in a lecture format, group work, demonstrated problem solving, and discussion. Applications, calculator use, tutoring sessions, etc. will be incorporated, as the instructor considers appropriate. Students will be responsible for reading the required sections, completing assigned in-class and homework problems, and attending class. In addition, students should expect to spend 6-9 hours per week outside of class in order to complete course requirements

Textbook: ***College Algebra, by Michael Sullivan, New Mexico Edition (8th main Ed) Packaged with MY MATH LAB***. A scientific calculator is recommended. Graphing calculators will NOT be allowed on the final exam. Instructors will determine allowance for these on tests and quizzes.

Attendance Policy: Students are expected to attend regularly and to be on time. No tardiness and no early outs. Five absences are considered to be excessive and **the student may be dropped from the class list after the fifth absence** at the discretion of the instructor.

Grading System: Your grade will be based on your performance on assignments, quizzes, my math lab, and exams. ***To receive a C or better in Math 121, you must earn at least a 70% on the final exam and an overall course average of 72% or better.***

My Math Lab HW/ Quizzes	200 points (100 each)	A	90-100
Three Major Tests	300 points	B	80-89
Cumulative Final Exam	200 points	C	72-79 (70-71 is only a C-)
Total	700	D	60-69
Course Average	Sum of points / 7	F	Below 60

Homework: Your homework is your most important effort in this class; homework is how you actually learn the material that will be on the quizzes and exams. Expect to do 2-3 hours of homework for every hour of class meeting time (on average 6-9 hours per week). Keep all of your homework together in a folder or notebook so that if you are having trouble with the course, you can bring it with you when you go to see the instructor or get tutoring. When you do your homework, make sure you attempt each problem without looking at a solutions manual or an example in the book when you work the problem. If you have problems, look back at the examples, but NEVER look at the examples as you are doing the problems. You will not have these examples to rely on during exams and getting used to using them while doing your homework is not conducive to learning the material.

Disability Statement: We accommodate students with documented disabilities. During the first two weeks of the semester, those students should inform the instructor of their particular needs.

Support Services: The Valencia Campus Library provides a quiet atmosphere for study and is an excellent resource for supplementary materials. It also has a link to all your course syllabi located at: http://www.unm.edu/~unmvclib/syllabifall2010.htm.

The Learning Center (505.925.8900) and the Open Computer Lab (V123) provide free access to word processors, email, Internet access and other software that students may find useful in the course of their studies. TLC also provides tutoring at no charge for all Valencia Campus students. If you feel you need a tutor, you may set up a regular time for tutoring, make occasional appointments for tutoring, or ask to see a tutor on a walk-in basis without an appointment.

Student Behavior: In accordance with the Code of Conduct as stated in the Policies and Regulations for UNM, student activities that interfere with the rights of others to pursue their education or to conduct their University duties and responsibilities will lead to disciplinary action. This includes any activities that are disruptive to the class and any acts of academic dishonesty. Students are expected to behave in a courteous, honest and respectful manner towards the instructor and their fellow students. Also, In UNM classrooms, all cellular telephones, pagers and beepers must be turned off or switched to silent or vibrator mode. Electronic entertainment devices are to be turned off and head phones removed.

Schedule of Assignments for Math 121 (Fall 2010)

Week	**Homework Exercises** (do only odd-numbered problems unless otherwise noted). These assignments will not be collected for grading. The grading ones are on My Math Lab.	**Topics**
Aug 23	1.1 11, 15, 37, 51, 79, 85 *[See also Chapter R problems above.]* 1.2 19, 27, 33, 39, 59, 93, 97 1.4 8, 13, 23, 39, 41, 79 1.5 15, 29, 37, 39, 59, 69	Linear Equations Quadratic Equations Radical Equations Solving Inequalities

	1.6 9, 19, 21, 31, 33, 55	Absolute Value
Aug 30	**Pre-lim Test on Incoming Skills- Problems** to review for the **Pre-lim Test: Chapter R Review** (pp. 81-83): 3-102 (by 3s) [omitting #s 48, 75, 90, 93 & 99; but adding #s 1, 13 & 31] 1.7 17, 23, 25, 29, 31 2.1 9, 11, 13, 19, 23, 29, 35, 37, 39, 41 2.2 1-15 (all), 17, 20, 29, 33, 39, 45, 47, 49-54 (all)	Applications Rectangular Coordinates Graphs of Equations
Sept 6	**September 6 – Labor Day Holiday – No classes** 2.3 1-11 (all), 13, 19, 37-45 (odds), 63, 65, 74, 79 7.1 2-4, 9, 19, 25, 29, 33, 38, 55-61 (all)	Lines Systems of Equations
Sept 13	2.4 11-39 (odds) (pp 150-151): 3-18 (by 3s), 19, 23, 29, 39-51 (by 3s), 61, 87, 93, 95 (pp. 202-203): 3, 5-16 (all), 17, 23, 27-42 (all), 44-46 (all) **Exam #1 (Chapters 1 & 2)**	Circles Chapter 1 Review Chapter 2 Review **(Chapters 1, 2 & 7.1)**
Sept 20	3.1 1-29 (odds), 32, 35-59 (odds), 67, 69, 71, 87, 89 3.2 9, 11-21, 23, 27, 31, 33, 37 3.3 3-33 (by 3s), 35, 39, 43, 45, 47, 49, 67, 69, 70	Functions The Graph of a Function Properties of Functions
Sept 27	3.4 9-16 (all), 17-33 (odds), 43, 45, 51 3.5 7-18 (all), 27, 29, 35-59, 65 3.6 3, 5, 7, 11, 15, 19, 23	Library of Functions Transformations Mathematical Modeling
Oct 4	4.1 9-47, 53, 55 4.2 1-9 (all), 11-17 (odds), 20 4.3 9-47, 53, 55, 69, 73, 75, 77, 85, 87	Properties of Linear Fnts Linear Models from

		Data Quadratic fntns & models
Oct 11	4.4 1-15 (odds), 27, 29, 30 5.1 11-21, 33-47, 57-71 **October 14-15 – Fall Break – No Classes**	Quadratic Models & Data Polynomial Functions
Oct 18	5.2 11, 21-31 (odds), 41, 45 Graphing Summary Worksheet (on-line) **Review for Exam #2**	Rational Functions Review **(Chapters 3, 4, 5 & 7.1)**
Oct 25	**Exam #2 (Chapters 3, 4, 5 & plus 7.1)** 6.1 9-19, 29, 33, 39, 43, 49, 53, 55, 61, 63, 65	Composite Functions
Nov 1	6.2 11, 15-22 (all), 23, 27-37 (odds), 41, 45, 49, 55, 59, 71, 73 6.3 11, 13d, 15d, 17-23 (odds), 29-36 (all), 37-61 (odds), 73-79 (odds)	Inverse Functions Exponential Functions
Nov 8	6.4 4-8 (all), 9-57 (odds), 63-70 (all), 77, 87-105 (odds), 113 6.5 7-23, 31-47, 51-71, 79-95 (all odds)	Logarithmic Functions Properties of Logs
Nov 15	6.6 5-21 (odds), 31, 33, 41, 43, 59 6.7 1-39 (odds)	Exp & Log Equations Compound Interest
Nov 22	6.8 1-11 (odds), 19, 21, 23 6.9 1, 3, 5, 9	Exponent'l Growth/decay Exp. Models from Data
Nov 29	**Review for Exam #3** **Exam #3 (Chapter 6)** 7.3 5, 7, 9, 13, 15, 47	**(Chapter 6)** Nonlinear Systems

Dec 6	**Review for the Final Exam**	**Review for Final Exam**
Dec 13	[Final Exam on Wednesday, December 15th at 30:00-05:00PM- In-Class]	**You may use a scientific calculator and a 3" X 5" note-card**

Math 107 (Problems in College Algebra): Math 107 is a one-credit, one-hour-per-week class designed to help students be successful in Math 121. It gives students the opportunity for more practice, more time for questions, and a setting for working together with other students.

Important guidelines for the course: Math 107 is a credit/no credit course. If you complete the work in Math 107, and pass your section of Math 121, you will receive an extra hour of credit for College Algebra. If you DO NOT pass your section of Math 121, you will not receive credit for Math 107. Credit for Math 107 is associated with passing Math 121. Requirements for success in Math 107 include:

• Good Attendance: Be in class every week, or notify your instructor if you have to be absent.

• Completing all assigned work consisting of some or all of the following:

Time Management Exercises

Study Guides for Exams

Error Analysis of Exams

Developing Critical Thinking Exercises

• Asking questions when you don't understand

• Bringing the work from your section (especially quizzes and tests) to Math 107

• Seeking other help when you need it.

List of Student Learning Outcomes for Math 121

Course Goal #1: Communication

Addresses UNM core area 2/HED Area II: Mathematics (Algebra Competencies)

SLO 1: Students will use correct mathematical notation and terminology

SLO 2: Students will be able to read a mathematical text and reproduce its main ideas

SLO 3: Students will be able to verbalize the steps needed to solve a problem

SLO 4: Students will read and interpret graphs

SLO 1: Students will demonstrate the proper use of interval and set builder notations to express answers to inequalities.

Course Goal #2: Solve various kinds of equations

Addresses UNM core area 2/HED Area II: Mathematics (Algebra Competencies)

Competency 2

SLO 1: Students will be able to solve linear equations and systems of two linear equations.

SLO 2: Students will be able to solve polynomial equations including quadratics and factorable higher order equations.

SLO 3: Students will be able to solve rational equations by identifying least common multiple for simplification of the equation and by identifying extraneous solutions to the original equation.

SLO 4: Students will be able to solve radical equations using inverse properties of exponents.

SLO 5: Students will be able to solve exponential and logarithmic equations using the properties of exponents and logarithms.

SLO 6: Students will be able to identify the standard and general form for the equation of a circle and from this equation, identify the center and radius for the circle.

Course Goal #3: Working with functions

Addresses UNM core area 2/HED Area II: Mathematics (Algebra Competencies)

Competency 3

SLO 1: Students will identify the domain and range for a given function

SLO 2: Students will be able to find the function value for a given domain value.

SLO 3: Students will be able to determine domain values for which a given function value occurs.

SLO 4: Students will be able to use the basic operations of addition, subtraction, multiplication and division with given functions.

SLO 5: Students will be able to create a composite function given two or more functions and decompose a given function into its basic parts.

SLO 6: Students will be able to identify and categorize functions according to the general properties of families of functions. E. g. Students will be able to recognize whether a given function is from the polynomial, rational, radical, exponential or logarithmic family.

Course Goal #4: Working with graphs

Addresses UNM core area 2/HED Area II: Mathematics (Algebra Competencies)

Competency 1

SLO 1: Students will be able to identify whether a given graph represents a function.

SLO 2: Students will be able to graph a circle given either form of the equation of a circle (standard or general), by determining its center and radius.

SLO 3: Students will be able to graph a given function by identifying the following features for the function

- The domain and range
- The x- and y-intercepts if they exist
- End behavior
- Asymptotes if they exist
- Intervals where the function is Increasing or decreasing
- Local maxima and minima

SLO 4: Students will determine the properties and behavior of a function given only the function's graph. i.e. the domain and range, intercepts, end behavior, asymptotes and specific values of the function.

Course Goal #5: Modeling and solving applied problems

Addresses UNM core area 2/HED Area II: Mathematics (Algebra Competencies)

Competency 4

SLO 1: Students will identify slope as a rate of change within the context of a given word problem, expressing in their own words what the slope represents for that specific situation.

SLO 2: Students will be able to construct appropriate equations to model a situation presented to them through a word problem.

SLO 3: Students will extract information from a word problem in such a way that allows them to identify the general behavior of the data through graphing.

SLO 4: Students will find maximum or minimum values for word problems which are modeled by quadratic functions.

Ultimate SLO: Students will be able to identify the family of functions that is being illustrated within an applied problem, either by representing the situation by a graph or using their understanding of how certain phenomena behave. E.g. constant rate of change will be a linear function, free-falling objects are a quadratic model and compound interest grows exponentially.

Important Dates:

09/03 (Friday) Last day to add courses or change sections

09/06 (Monday) Labor day Holiday (NO Class)

09/10 (Friday) Last Day to Drop without a grade, Last Day to Drop with a Refund

09/17 (Friday) Last day to change grading options

11/12 (Friday) Last day to withdraw without the Dean's approval

12/ 10 (Friday) Last day to withdraw with the Dean's approval

In-Class Final Exam: Wednesday, December 15, 2010 @03:00-05:00PM (A-129)

MyMathLab Grading Rubric:
Each computational assignment is worth 10 Homework points.

If you score:	You will receive:
85% or better	10/10
80 to 85%	9/10
75 to 80%	8/10
65 to 75%	7/10
55 to 65%	6/10
45 to 55%	5/10
35 to 45%	4/10
25 to 35%	3/10
Attempt homework but score less than 45%	2/10