# Math 121, College Algebra Section 501
# Summer 2015 CRN 16738

**Instructor:** Elaine Clark **Office:** Academic/Arts & Sciences Bldg. Room 142A

**Office Hours:**

**Face-to-Face at Valencia Campus:** Tuesday and Thursday 9:30 to 10:15 AM and 2:00 to 4:30 PM.

**Online:** Tuesday and Thursday 2:00 to 4:30 PM. They will occur at https://meeting.unm.edu/ewclarkonline/ . I can be available in the evenings and sometimes on Sundays for online office hours but you will need to schedule ahead for these.

**Other hours by appointment**

**Phone:** 925-8618 (my office), 925-8600 (Academic office)
**email:** ewclark@unm.edu or send a message in Blackboard Learn. I will check email Monday through Thursday afternoon unless I am out of town. Expect a response within 24 hours to email messages sent Sunday afternoon through Thursday afternoon. If you send me a message on Friday or Saturday, I will likely not see it until sometime late Sunday.

**Course Prerequisites**

In order for you to enroll in this course you will need to meet one of the following criteria:

- ACT score greater or equal to 22
- SAT score greater or equal to 510
- Grade of C or better in MATH 120
- Compass Algebra score greater than 54
- College Algebra placement score greater than 33

Check with your advisor to determine if you meet one of these requirements.

**Course Overview**

College Algebra prepares you for, and is one of the prerequisites for Math 150 (Pre-Calculus), Math 123 (Trigonometry), and Math 180 (Elements of Calculus I). It is also a graduation requirement for many majors at UNM. It is the study of equations, functions and graphs, especially those involving linear, quadratic, exponential, and logarithmic functions. You will also receive an introduction to polynomial and rational functions and their graphs. And you will be asked to handle various types of applications of these functions.

This course emphasizes algebraic problem solving skills, so be ready to work those algebra muscles! If it has been a while since you have done any algebra, plan on spending time "catching up" during the first few weeks of the semester.

**Student Learning Outcomes**

A list of the Course Goals and Student Learning Outcomes as posted on the main campus website for this course are listed at the end of this syllabus and on your schedule. You should skim through these to know what to expect from this course.

You will learn best by going back and reviewing what you have done to find out where your mistakes are and to correct those mistakes. Use all the tools available to you to ***learn*** the material.

**Text and Tools - Required**

The text for this course is **College Algebra, NM Edition by Sullivan** (comes from 9th Ed) or you can use **College Algebra, 10th ed. by Sullivan** but it will only be available as an eText. Make sure the text you have comes with a working MyMathLab (MML) access code. If you wish, you may purchase the access code only; you need not also purchase the hard copy of the book.

1. You will need a MML account. If you have used MML before you can use the same account you created the first time you used it.
2. You will need a Student Access Code which will come with your book or you can purchase online (credit card required) when you register for the course at http://pearsonmylabandmastering.com/ .
3. You will need to register for our course in MyMathLab. Go to http://mymathlab.com/ or http://pearsonmylabandmastering.com/ and follow the steps to register. Our course ID is:

   **COURSE ID: clark91958** for the custom edition
   **COURSE ID: clark12887** for the 10th edition

   Once you register, run the Installation Wizard to make sure you have all the appropriate software installed on your computer.
4. You will need access to Blackboard Learn. This is the primary program we will use for communication in the class. You will use your UNM NetID to log into Learn. You may access it directly via http://learn.unm.edu
5. You will need to use a *scientific* calculator for this course. You need not own a *graphing* calculator, any assignments that require the graphing of functions you can also do using free software on the internet.
6. You will also need to know how to log into our Adobe Connect room, https://meeting.unm.edu/ewclarkonline/. This is where we will have the beginning-of-semester orientation and where all online office hours will occur.

**Other software requirements:**

- Those needed to properly run MyMathLab. This includes the latest Javascripts and QuickTime player (both free downloads). Be sure to run the Installation Wizard in MML the first time you login to our course.
- Adobe Reader (a free download), preferably version 11.0 or better.
- Internet Explorer is not the best choice for a web browser. I have had good luck with Google Chrome but Mozilla Firefox and Safari also work. I am not sure how well these

programs will work on Linux computers, so if you have a Linux operating system we will need to talk. Also, MyMathLab is now supposed to be fully compatible with tablets or mobile devices.

**You will need high-speed internet and the ability to upload free software to access the online materials.**

**Time for This Course:** Plan right now to spend a minimum of ***12 hours outside of class per week*** for this class. This time cannot all be lumped on the weekend or in one day; you will need to spread out the time you allot to this course. There is no guarantee you will pass if you dedicate this amount of time, you still need to learn the material and use your time wisely, but it is not likely you will pass if you don't.

**Course Grade**

Your Course Grade will be determined in the following way:

- Homework Assignments (computational and guided notebook) 20%
- Participation/Attendance 10%
- Unit Quizzes in MML 20%
- Projects 10%
- Midterm Exam 10%
- Departmental Final 30%

Check Blackboard Learn regularly for postings of assignment due dates. If there is a question about when something is due, the date on the calendar in Blackboard Learn will be considered the official due date.

## You must score at least a 70% on the final exam to earn a passing grade in the course.

Depending on the grading option you have chosen, your final course letter grade will be determined as follows:

You will receive an **A** in the course

- if you have a weighted average of 90% or better and score at least a 70% on the final exam.

You will receive a **B** in the course

- if you have a weighted average of 80% to 89% and score at least a 70% on the final exam.

You will receive a **C** in the course

- if you have a weighted average of 70% to 79% and score at least a 70% on the final exam.

You will receive a **D** in the course

- if you have a weighted average of 70% or greater but score less than a 70% on the final exam.

or

- if you have a weighted average of 50% to 69%.

You will receive an **F** in the course

- if you have a weighted average less than 50%.

You will receive a **CR** in the course

- if you have a weighted average of at least 70% and score at least a 70% on the final exam.

You will receive a **NC** in the course

- if you have a weighted average less than 70% ***or*** score less than a 70% on the final exam.

A plus or minus could be added to a grade if your weighted average is near one of the cut-off scores. I do not as a rule assign a grade of C– since a passing score for this course is **C or better**, so C– would ***not*** be a passing grade.

**Homework:** Your homework will come in two parts:

- **Guided Notes**, and
- **Computational Assignments**.

Guided Notes – You will need to complete the Guided Notes for each unit. ***If you skip these assignments at the beginning of the semester I will set it up so that you cannot access the Quiz for that unit until you have submitted the Guided Notes.***

For each unit, during class we will discuss questions from the previous unit and I will present material from the new unit. During the course of the lecture, I will present questions for you to answer. Take the time to write your answers to these questions. If you miss class one day, these lectures will be recorded, so watch the video for that day and complete the questions. You may pause the video of you need more time. Answers to the questions presented during the lecture will count as your Guided Notes for that unit.

I will check off your Guided Notes before you leave class on that day.

Computational Assignments – These questions are posted in MML. Here are instructions for how to access these assignments.

1. On the tool bar in MML (left side of window on home page), click on Assignments.
2. In the window that opens, at the top you will see buttons labeled "Show All", "Homework", "Quizzes & Tests", and "Chapter." The Show All button will likely be highlighted.
3. You will see a list of the computational assignments and quizzes with their due dates. Click on the assignment you want to complete. If the hyperlink is no longer active this means you are attempting to access it after deadline.

You are automatically allowed to work past deadline on Computational Assignments, you won't need to ask for extensions, **but** do not get behind. ***The quiz for that unit will not open until you have scored at least a 60% on the Computational Assignment***. Please use the Ask My Instructor button if you need help!

**Participation**: Participation is required for this course and will consist of attending class and participating in the group activities. Other ways you can earn participation points are:

- Complete "word problem of the week" posted in Blackboard Learn (points vary, usually 10 PP each). We will work on these in class, but, if you miss that day print the activity and complete it on your own to turn in.
- Ask me questions! You will receive ¼ of a point for each Ask My Instructor question you email me. Also, any other questions you email me or message me about can earn participation points.
- Document tutoring you have received (email me to find out how to document tutoring). 5 PP for each hour documented.
- Attend office hours or review sessions, either in person or online. 5 PP for each visit or hour of the review session.

**You will need to accumulate 100 Participation Points by the end of the semester.**

If you miss three (3) *consecutive* days of class, you may be dropped from the course. **If by the end of the second week of class if you show no or little progress, have not purchased your book, and have not registered in MyMathLab or made other arrangements for completing the assignments you *will* be dropped.**

**Unit quizzes:** I have divided the material in the book into 11 units. These divisions include usually two or three sections of the text but may include material from only one section or as many as four. After you complete the homework for the unit then take the quiz on that material. You are allowed 3 attempts on these quizzes. I consider mastery a score of at least 75 to 80%. You should strive to achieve this score. If not, study the material again and retake the quiz. The quiz *will not open for you until you have scored at least a 60% on the Computational Assignment*. Each **unit quiz completed is worth a maximum of 10 quiz/test points**.

Sometimes MML will count a problem incorrect because you do not enter the answer in the form the program wants or for some other reason not immediately apparent. I will check your progress approximately every week and will review your unit quizzes to see if you can receive some points back. If you want to email me any work or explanation of why you missed a question, this can result in more partial credit.

DO NOT consider any of the grades posted in MyMathLab as representing your actual grade. After the first project I will post and update your grades regularly in Blackboard Learn.

**Projects:** You will be assigned between two to four projects to complete during the semester, each worth 100 points. For these projects you may work with a partner or in a group of no more than four people. Most of these we will work on in class, but you may need to finish them at home. If I receive identical project submissions but no documentation for collaboration, you will not receive points for the project. ***These projects will emphasize concepts that the book does not cover well and are a required part of the learning objectives, so they are required! Don't ignore them.***

**Midterm and Final Exams:** The midterm exam and the departmental final exam must be taken in person. I will schedule class time for you to take these exams. The midterm counts 10% of your course grade and the final counts 30% of your course grade. Also, you must score at least a 70% on the final exam to pass the course.

**Working Ahead and Late Assignments:** It is conceivable that you may be able to work ahead on your assignments. If I find you jumping around too much or not taking the time to complete the Guided Notes before attempting the work in MML, I will change how these are assigned to make you slow down and learn the material rather than just try to bash tests to get through.

If, on the other hand, you find yourself falling behind, contact me as soon as possible. I will allow you to complete some assignments later than the posted deadline, but not if you haven't contacted me and made arrangements. See extension policy below. Late assignments may be docked 10% of the grade.

**Extensions on Assignments:** If events in your life or trouble with technology require you to miss a deadline for a unit quiz I will grant up to four extensions on quizzes; *this means four quizzes not four requests*. You will already be able to work past deadline on the Computational Assignments, so you need not request an extension for these. Projects can be turned in no more than a week late but will be docked points. Guided Notes are not considered late as long as I received them about the time the quiz for that unit is due.

**Support:** If you are struggling in this course, do not be afraid to ask for help!

- Math 107: This is a one-credit lab to give you help with this course. For this summer, the class meets on Tuesdays and Thursdays from 9:00 to 9:50 AM.
- SI Tutor: We are assigned a tutor for this course. Be sure to find out when our tutor will offer times in the STEM Center or the Tutoring Center to help you with this course.
- Ask My Instructor: Do not be afraid to click on the Ask My Instructor button in MyMathLab!
- Office Hours: I have office hours Monday through Thursday. Feel free to come by or log into the Adobe Connect room for online hours or make an appointment to get help.
- Form study groups: You may work together with other members of our class. However, for your Guided Notes and other work meant to be done individually and turned in for a grade, you will need to write what *you* know, not regurgitate a consensus of the group.
- Free Tutoring: The Learning Center has free tutoring and open labs. Call 505-925-8907 for more information. Also, we have an online tutor available, Ryan Baltunis. I will post his contact information in the Tools for Success in Blackboard Learn. There is also tutoring available in the STEM center and I will be spending one hour a week there. Call 505-925-8553 for more information.
- Other Tutoring: If you do not live in the Albuquerque or Valencia County area you should explore other options for tutoring. If you want to earn participation points for tutoring, however, you will need to document this. There are generic online tutoring sites available on the Internet but be aware that you often get what you pay for. In other words, if it's free it may not be that great and you may not be able to document tutoring

received. Also, if you have a friend or relative help you this may be great but there won't be an easy way to document the tutoring for participation points.

- Online Resources: In Blackboard Learn I will post a folder called "Tools for Success." In this folder you will find short tutorial screencasts and other web links to help you succeed. One of these will be SmartPen recordings. Be sure to check these out and open the sample recording to make sure it works properly. I will also include the link to the recorded help sessions and various online resources to help you with the content of the course.

**Other Important Information:**

Equal Access: If you have a documented disability, please provide me with a copy of your letter from Equal Access Services as soon as possible to ensure that your accommodations are provided in a timely manner. It is up to you to obtain documentation of a disability by contacting Equal Access Services, Jeanne Lujan at (505)925-8910. I will not guarantee accommodation without the appropriate documentation.

**Plagiarism and Not Doing Your Own Work**

It's a bad idea to plagiarize or to have other people do your work for you. Refer to the UNM-Valencia Catalog for the campus policy on "Dishonesty in Academic Matters." There are various tools now developed to help determine if the person enrolled in an online course is actually the person completing the work. I may be implementing some of these tools as the semester progresses, especially if there is an obvious need to do so.

*Don't Cheat!* Cheating, in my opinion, is any behavior that short circuits *your* learning. This can range from mindlessly mimicking the worked out examples in the MML computational assignments, to simply copying someone else's solution, to paying someone to complete the course for you. I won't always be able to detect when you have cheated, at least not at the time you cheat, but the chances of you passing the midterm and final exams goes down considerably the more you cheat. Save yourself some time and money and put in the effort now to learn the material for the course.

**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 and will read and appropriately interpret various representations of information.

SLO 2: Students will verbalize the steps needed to solve a problem.

SLO 3: Students will use various course technologies to connect with each other and the instructor, and to access course materials.

**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 solve linear equations and systems of two and three linear equations.

SLO 2: Students will solve polynomial equations including quadratics (polynomials of degree 2) and factorable polynomials of higher degree.

SLO 3: Students will solve rational equations by identifying the least common multiple needed to simplify the equation, and by identifying extraneous solutions to the original equation.

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

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

SLO 6: Students will identify the standard and general form for the equation of a circle, will convert between the two forms using completing the square, and will 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 and find the function value given a domain value as well as find the domain value given a specific function value.

SLO 2: Students will add, subtract, multiply and divide given functions, will create a composite function given two or more functions, and will show the decomposition of a given function into its basic parts.

SLO 3: Students will identify and categorize functions according to the general properties of families of functions. For example, Students will recognize whether a given function is from the polynomial, rational, radical, exponential or logarithmic function family.

**Course Goal #4: Working with graphs**

Addresses UNM core area 2/HED Area II: Mathematics (Algebra Competencies)
Competency 1

SLO 1: Students will determine if a given graph represents a function.

SLO 2: Students will graph a circle given either form of the equation of a circle (standard or general).

SLO 3: Students will 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. In particular, 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, and will express in their own words what the slope represents for that specific situation.

SLO 2: Students will construct appropriate equations to model a situation presented to them through a word problem. They 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 3: Students will find maximum or minimum values for word problems which are modeled by quadratic functions.

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

**Preliminary Schedule (subject to change as needed)**

| Week | Date | Day | Assignments Due | Topics | Sections |
|---|---|---|---|---|---|
| 1 | 6/2 | Tues. | Orientation, Register in MML, Log into UNMLearn | Introduction, Review | Chapter R selected sections |
| | 6/3 | Wed. | **Ch. R test** | | |
| | | | Guided Notes satisfy Course Goal #1: SLO 2 | | |
| | 6/4 | Thurs. | **Unit 1:** Guided Notes | Review, Solving | |
| | 6/5 | Fri. | Computational Assignment due | Linear Equations, Linear Systems, Rational & Radical Eqs. | R.7, R.8 1.1, 1.4, 8.1 |
| | **June 5 - Last day to add** | | | | |
| 2 | 6/8 | Mon. | **Quiz Unit 1** | **Word Problem of the Week #1** | |
| | | | Unit 1 assignments satisfy Course Goal #2: SLO 1, SLO 3, SLO 4 | | |
| | 6/9 | Tues. | **Unit 2:** Guided Notes | Applications of Linear | |
| | 6/10 | Wed. | Computational Assignment due | Equations, Graphing Lines, Fitting a Line to Data | 1.7, 2.3 4.1, 4.2 |
| | 6/11 | Thurs. | **Quiz Unit 2** | **Word Problem of the Week #2** | |
| | | | Unit 2 assignments satisfy Course Goal #2: SLO 1, SLO 3, SLO 4 | | |
| | 6/12 | Fri. | **Unit 3:** Guided Notes Computational Assignment due | Linear Inequalities, Interval Notation, Intro to Functions, Average Rate of Change | 1.5, 3.1, 3.3 Average Rate of Change |
| | **If by June 11 you have not completed required assignments, you will be dropped** | | | | |
| 3 | 6/15 | Mon. | **Quiz Unit 3** | **Project 1 due** | |
| | | | Unit 3 assignments satisfy Course Goal #4: SLO 1 & Course Goal #5: SLO 1 | | |
| | 6/16 | Tues. | **Unit 4:** Guided Notes | Types of Functions, | |
| | 6/17 | Wed. | Computational Assignment due | Properties and Graphs, Domain & Range Piece-wise Defined | 2.2, 3.2, 3.4 |
| | 6/18 | Thurs. | **Quiz Unit 4** | **Word Problem of the Week #3** | |
| | | | Unit 4 assignments satisfy Course Goal #1: SLO 5 & Course Goal #5: SLO 2 | | |
| | 6/19 | Fri. | **Unit 5:** Guided Notes Computational Assignment due | Transformations Operations on Functions Determining Domain of Functions | 3.1, 3.5 |
| 4 | 6/22 | Mon. | **Quiz Unit 5** | **Project 2 due** | |
| | | | Unit 5 assignments satisfy Course Goal #1: SLO 5 & Course Goal #5: SLO 2 | | |
| | 6/23 | Tues. | **Unit 6:** Guided Notes | Composition of Functions, | |
| | 6/24 | Wed. | Computational Assignment due | One-to-One and | 6.1, 6.2 |
| | 6/25 | Thurs. | **Quiz Unit 6** | Inverse Functions, | |
| | | | Unit 6 assignments satisfy Course Goal #3: SLO 3 & Course Goal #4: SLO 4 | | |
| | | | **Review for Midterm Exam** | | |
| 5 | 6/30 | Tues. | **Midterm Exam must be taken in person by Wednesday, July 1** | | |
| | 7/2 | Thurs. | **Unit 7:** Guided Notes Computational Assignment due | Exponential and Logarithmic Functions, Graphs, Applications | 6.3, 6.4. 6.5 |

**Preliminary Schedule (subject to change as needed)**

| Week | Date | Day | Assignments Due | Topics | Sections |
|---|---|---|---|---|---|
| 6 | 7/6 | Mon. | **Quiz Unit 7** | **Word Problem of the Week #4** | |
| | | Unit 7 assignments satisfy Course Goal #3: SLO 1, SLO 2 & Course Goal #4: SLO 4 | | | |
| | 7/7 | Tues. | **Unit 8:** Guided Notes | Solve Exponential and | |
| | 7/8 | Wed. | Computational Assignment due | Logarithmic Equations, Applications | 6.6, 6.7, 6.8 |
| | 7/9 | Thurs. | **Quiz Unit 8** | **Project 3 due** | |
| | | | Unit 8 assignments satisfy Course Goal #3: SLO 1, SLO 2, SLO 3 | | |
| | 7/10 | Fri. | **Unit 9:** Guided Notes Computational Assignment due | Solving Quadratic & Polynomial Equations, Factoring Distance Formula | R.4, R.5 1.2, 2.1 |
| 7 | 7/13 | Mon. | **Quiz Unit 9** | **Word Problem of the Week #5** | |
| | | | Unit 9 assignments satisfy Course Goal #2: SLO 2 | | |
| | 7/14 | Tues. | **Unit 10:** Guided Notes | Quadratic Functions, | |
| | 7/15 | Wed. | Computational Assignment due | Applications, Finding Max and Min, Circles | 2.4, 4.3 |
| | 7/16 | Thurs. | **Quiz Unit 10** | **Project 4 due** | |
| | | | Unit 10 assignments satisfy CG #2: SLO 2, SLO 6; CG #4: SLO 2 & CG #5: SLO 3 | | |
| | 7/17 | Fri. | **Unit 11:** Guided Notes Computational Assignment due | Polynomial and Rational Functions | 5.1, 5.2, 5.3 |
| 8 | 7/20 | Mon. | **Quiz Unit 11** | | |
| | | | Unit 11 assignments satisfy Course Goal #4: SLO 3 | | |
| | 7/21 | Tues. | **Review for Final Exam** | | |
| | 7/23 | Thurs. | **Final Exam must be taken in person by Thursday, July 23** | | |