Math 121: College Algebra – Dual Credit
Valencia High Schools
Spring 2017   CRN: 38163
SYLLABUS

Instructor: Mychael Smith   **Office:** Academic Bldg. Room A-107

Office Hours:
- In Office: M: 1:00-2:00PM; TR: 10:45-11:45AM and 1:30-2:30PM
- Math Center: M: 12:00-1:00PM
- Stem Center: W: 12:00-1:00PM
- Other hours by appointment

Contact Information:
- Phone: 925-8644, 925-8600 (Academic office)
- email: mysmith@unm.edu or send a message in BbLearn. I will check email Monday through Friday afternoon unless I am out of town. Expect a response within 24 hours to email messages sent Sunday afternoon through Thursday evening. If you send me a message on Friday afternoon through Sunday I may not see it until Monday.

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.

Student Learning Outcomes:
A list of the Course Goals and Student Learning Outcomes as posted on the main campus website, as well as some additional communication goals pertinent to the online environment, are listed at the end of this syllabus. You should skim through these to know what to expect from this course.
Required Materials:
- Textbook: You will use the textbook from your high school math class. Because your high school text may cover material not in our Math 121 course, or may not cover a topic,

I have created mini-projects and projects for those topics as well as tests in MyMathTest to help you learn or review the required material.

- MyMathTest: You will need Internet access in order to complete the quizzes posted in MyMathTest (MMT). I will not accept handwritten work for the quizzes/tests. ***You should attempt to score an 80% on each quiz/test***. This means, don't just take it once and move on, unless you have achieved 80% mastery. If you do not score 80%, the program will generate a Study Plan for you which allows extra practice. Be sure to complete the Study Plan questions before re-taking the test/quiz.

  You are allowed up to three extensions on these tests and no more. This should account for illness, computer issues, and so forth. Also, you are allowed 3 attempts on each test to achieve the 80% mastery score. Moreover, you must score at least 80% on the first quiz or risk being dropped from the class.

- Blackboard Learn: This is the program we will use for communication. Be sure to check in regularly for messages, announcements, and to check the calendar for what is due. The calendar in Learn will give the official due dates for assignments. Also I will post projects and Word Problems of the Week that you will need to complete. You will need a UNM Net ID to access Learn.

- Scientific Calculator: Though a calculator was nice to have for Math 120, it is a must in Math 121, especially when we work on the exponential and logarithmic functions. You will be allowed to use a *scientific* calculator on the midterm and final exams so it is a good idea to use one during the entire semester.

Grade: There are six components that will make up your overall course grade:
- Homework Assignments from your High School Teacher   15%
- Chapter/Unit Tests & Quizzes given by your HS Teacher   15%
- Quizzes/Tests in MyMathTest   15%
- Projects and WPOWs posted in Learn   15%
- Midterm Exam   10%
- Final Departmental Exam   30%

You must score at least a 70% on the final exam to earn a passing grade in the course. You must also have an overall course average of at least a 70% for a passing grade in the course.

If you have not completed the assignments due by midnight Thursday, February 4, you risk being dropped from 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.

Full credit on assignments means you have turned in complete, correct work *on time*. Assignments that are not complete, correct, or on time may lose points.

Midterm and Final Exams: You will need to take a midterm exam, given in March and a final exam. These exams will *not* be on the computer; they will be pencil and paper exams. You may view the midterm as a practice for what to expect the final to be like. The final will be cumulative and you must score a 70% or more on the final to pass the course.

Support: If you are struggling in this course, do not be afraid to ask for help. It is well known that in order to succeed in a college-level course, you will need to spend two to three hours outside of class on coursework for every hour spent in class. This means you should set aside eight (8) hours outside of class EACH WEEK to work on assignments.
- Free Tutoring: The Learning Center and the STEM Center at Valencia campus provide free tutoring and open labs. Call 505-925-8900 or 505-925-8515 for more information and tutoring appointments. You can also check online at http://www.unm.edu/~tutor/
- Office Hours: Times for my office hours are posted on our Learn homepage.   Feel free to contact me or make an appointment.
- Ask My Instructor: When working Study Plan questions in MyMathTest there is a button you can click on to send me an email with your question. The email will include a link to the specific question you are struggling with. This button is not available in the quizzes

or tests but each test is designed to generate study plan questions for those you miss. Be sure to check these out since the questions also have links to other aids like videos and worked-out sample problems.

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. I will not guarantee accommodation without the appropriate documentation.

- Academic Dishonesty: Each student is expected to maintain the highest standards of honesty and integrity in academic and professional matters. Any student who has been judged to have engaged in academic dishonesty in course work may receive a reduced or failing grade for the work in question and/or for the course.

- Copying from the Internet: I have no problem with you consulting the Internet for answers, but be sure those answers actually apply to the question you've been asked. Also, don't just copy down answers given you by an Internet website; it won't be there for you to consult on the midterm or final exam.

Student Learning Outcomes:

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.

<u>SLO 6</u>: 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: <u>Working with functions</u>
Addresses UNM core area 2/HED Area II: Mathematics (Algebra Competencies)
Competency 3

<u>SLO 1</u>: 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.

<u>SLO 2</u>: 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.

<u>SLO 3</u>: 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: <u>Working with graphs</u>
Addresses UNM core area 2/HED Area II: Mathematics (Algebra Competencies)
Competency 1

<u>SLO 1</u>: Students will determine if a given graph represents a function.

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

<u>SLO 3</u>: 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

<u>SLO 4</u>: 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: <u>Modeling and solving applied problems</u>
Addresses UNM core area 2/HED Area II: Mathematics (Algebra Competencies)
Competency 4

<u>SLO 1</u>: 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.

<u>SLO 2</u>: 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.

<u>SLO 3</u>: Students will find maximum or minimum values for word problems which are modeled by quadratic functions.

<u>Ultimate SLO</u>: 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.