

MATH 121: COLLEGE ALGEBRA
University of New Mexico, Spring 2016

Instructor:

Office:

E-mail:

Office Hours:

Prerequisite: MATH 103, MATH 120 or placement test

Textbook: COLLEGE ALGEBRA, Sullivan (*NM Custom Edition -10th*)

Calculator: Scientific calculator may be necessary. **No calculators** will be allowed on any of the exams (including the final).

Homework: Your daily homework is your most important effort in this course. It is imperative that you do all of the assigned problems, especially the hard ones, because this is how you actually learn the material. Expect 2-3 hours of homework for every hour of class meeting time (on average **6-9 hours per week**).

MyMathLab: MyMathLab is the electronic support that is crucial for your success in this class. It includes practice problems, quizzes, and tutorials. To register, go to <http://www.mymathlab.com>. A registration code comes with your new textbook. Your instructor will have your course code.

Quizzes: There will be 12 in-class quizzes (10 points each) given throughout the term. Because your two lowest scores will be dropped, there will be no make-up quizzes given.

Exams: There will be four in-class exams, 100 points each. You have to show all your work and use proper mathematical notation to receive full credit. A correct answer without work will receive 0 points. If you **must** miss an exam, you **must** contact your instructor **on** or **before** the day of the exam in order to discuss a make-up test. Make-up tests will be given solely at your instructor's discretion. If you do not contact your instructor immediately, you may be dropped from the course.

Final Exam: Core final exam, worth 200 points. The final exam will be on **Monday, May 9th, 10 am-12 pm, room TBA**.

Grading: To get full credit on graded work students must address all mathematical components presented by the problem, showing all steps and calculations. The use of proper notation, well structured procedures, and legibility will be taken into account when assigning points.

Your grade will be determined based on your performance on the following:

Quizzes/Assignments	200 pts
Tests	400 pts
Cumulative Final	200 pts
Total	800 pts

Grade mode and Withdrawals: Your grade mode needs to be selected in the first 2 weeks of the semester; this includes Audit). We will not give permission to change the grade mode after the deadline. Students who are in the regular grade mode and who withdraw after the end of week 3 will receive a grade of "W". If you do not withdraw (but stop attending), you will receive a letter grade of A, B, C, D, or F (not a W). Students who are in the CR/NC grade mode and who withdraw after the end of week 3 will receive a grade of "W". If you do not withdraw (but stop attending), you will receive a letter grade of NC (not a W).

See the list of all deadlines: www.registrar.unm.edu

Note: Notes of any kind, 3x5 cards, books, cell phones, computers, headphones etc. are **not allowed** on any tests, including the Final Exam.

Communication: Please check your UNM e-mail regularly or make sure to forward your e-mail from that address to an account that you check at least daily. Your instructor may send you important information and updates to your UNM e-mail address. Also, if you e-mail your instructor, please include your full name and the class and section that you are in.

Deadlines: The Department of Mathematics and Statistics will adhere to all of the registration deadlines published by the Office of the Registrar in the schedule of classes: www.registrar.unm.edu. We will not give permission to override any deadline except in documented emergencies; failing a class is not considered an emergency.

Attendance: Attendance is mandatory. If a student has more than three unexcused absences he/she may be dropped from the course. Tardiness or early departure may be regarded as absence. Please note that it is the student's responsibility to drop the course if he/she stops attending. A failing grade of F may be assigned if the student stops attending and does not drop.

Student Behavior: According to 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 and respectful manner toward the instructor and their fellow students. Students may be dropped for inappropriate behavior. The use of cell phones, headphones, smart watches, etc. is not permitted during class or exams.

Cheating: Cheating of any kind will not be tolerated. Examples are: looking at a neighbor's exam, plagiarizing, using a calculator when not permitted, using the book and/or a cheat sheet, modifying an exam after it is graded, etc. The instructor may warn an offending student, the score of the exam may be reduced, the score may be set to zero, the student may get dropped from the class, the student may get a grade of F for the class, and in most cases the incident will be reported to the Dean of Students.

Accommodation Statement We will accommodate students with documented disabilities (through ARC). During the first two weeks of the semester, those students should inform the instructor of their particular needs. Please contact or visit *Accessibility Services (Mesa Vista Hall 2021, 277-3506) provides academic support to students who have disabilities. If you think you need alternative accessible formats for undertaking and completing coursework, you should contact this service right away to assure your needs are met in a timely manner. If you need local assistance in contacting Accessibility Services, see the Bachelor and Graduate Programs office.*

Extra Help: In addition to your instructor's office hours, there is extra help available at:

- The *Algebra Tutoring Table*, staffed by algebra instructors 9 - 3 every day. It is located in front of the elevators on the second floor of DSH and behind room #224.
- CAPS: Center for Academic Program Support. Located on the 3rd floor of Zimmerman Library, 277-4560
- MEP Engineering Annex, room 210, or call the study group at 277-8795
- CATS: Counseling and Therapy Services, Student Health Center, 277-4537. (For test anxiety, etc.)

Registration, Drop, and Grade Change Deadlines: The Department of Mathematics and Statistics will adhere to ALL registration deadlines published by the Office of the Registrar in the schedule of classes. For full term classes in the spring 2013 term the deadlines are:

January 29th	Add a course or change sections
February 5th	Last day to change grade mode
April 15 th	Last day to withdraw without the Dean's permission (grade of W assigned)
May 6th	Last day to withdraw with the Dean's Permission

Student Learning Outcomes: By the end of the course, students will be able to

A. Understand the concept of a function

1. Apply the definition of a function
2. Identify domain and range. Interpret in context when appropriate.
3. Use function notation to evaluate functions.

B. Build New Functions from Existing Functions

1. Use graphing transformations
2. Use function arithmetic
3. Find inverse functions

C. Build and Analyze Graphs

1. Understand the relationship between a function's equation, table and graph.
2. Identify or sketch the following key features of a graph: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; slope; vertex; and end behavior.
3. Create graphs using key features.
4. Write the equation of a function or circle given its graph based on the key features shown. (reverse of above outcome)
5. Interpret key features of functions in context.

D. Apply Algebraic Techniques

1. Evaluate numeric expressions in exact form and find decimal approximations for irrational numbers.
2. Solve equations and inequalities
3. Simplify algebraic expressions to analyze functions and graphs.

Note: The instructor reserves the right to change the syllabus at any point of time during the semester.

Tentative Schedule

Week	Monday	Wednesday	Friday
1/18	No Class	1.6	3.1
1/25	3.2	3.3	3.3/3.4
2/1	3.4	3.5	3.5
2/8	Review	Exam 1	4.1
2/15	8.1	4.3	4.3
2/22	4.4	5.1	5.2
2/29	5.2/5.3	5.3	Review
3/7	Exam 2	6.1	6.1
3/14	Spring	Break	Hooray
3/21	6.2	6.2/6.3	6.3
3/28	6.4	6.4	6.5
4/4	6.5	Review	Exam 3
4/11	6.6	6.6	6.7
4/18	6.8	2.1	2.4
4/25	Review	Review	Exam 4
5/2	Review for	Cumulative	Final
5/9	Final Exam	Monday May 9th	10am-12pm

The online HW is based mostly on the following problems in the text. It is important that you also practice solving these problems by hand in order to prepare for exams. If you have questions about these problems please ask your instructor, visit the algebra table, or a tutor.

Section	Suggested Problems
3.1: Functions	1-4 all, 15,27,31,39,45,47,49,51,55,59,63,77,81,93
3.2: Graphs of Functions	1,2,9,15,19,23,25
3.3: Properties of Functions	1,5,21-29 odd,33,41,45,61
3.4: Library of Functions/Piecewise Functions	1,3,9-25 odd,29,33,35,47
3.5: Graphing Techniques/Transformations	1,3,7-18 all, 27,29,39,43,51,55
1.6: Equations/Inequalities Involving Absolute Value	1,2,5,7,9,19,21,31,35,39,41,43,47
2.3: Lines	1,2,41,55,49,73
4.1: Linear Functions	13,15,29,45,47
4.3: Quadratic Functions	11-25,31-39,53,75,77,81,
5.1: Polynomial Functions	15,19,23,27,29,41,49,53,57,69,81,85
5.2: Properties of Rational Functions	13-37,43,45,49
5.3: Graphs of Rational Functions	7,9,11,15,19,37,49

6.1: Composition of Functions	11,17,21,25,31-35,43,49,65
6.2: One-to-one Functions; Inverse Functions	5,11,13,15,19,27,33,37,41,43,49,53,69,89
6.3: Exponential Functions	15,21,23,33-41,45,53,54,57,61-65,71,79,101
6.4: Logarithmic Functions	9,13-19,23-27,31-39,43,49,57,59,71,77,87-93,99,101,103
6.5: Properties of Logarithms	1-7,13-29,37-67,71,77
6.6: Logarithmic and Exponential Equations	5-59,81,87,97
6.7: Financial Models	3-33, 39,41
6.8: Exponential Growth/Decay	1-13,21
2.1: Distance and Midpoint Formulas	17-43,47,49
2.4: Circles	7-41