MATH 1220: College Algebra

Instructor

Dr. Ariel Ramirez
aramirez8@unm.edu
Office: LRC 133

Class Details

Tuesday/Thursday
Class Time: 10:30—11:45 am
Room: VAAS 124
MyMathLab Course ID:
ramirez67801

Tutoring Hours

T/Th 1—2:30 pm (LRC)
Or by Appointment

Course Description

The study of equations, functions and graphs, reviewing linear and quadratic functions, and concentrating on polynomial, rational, exponential and logarithmic functions. Emphasizes algebraic problem solving skills and graphical representation of functions.
(3 Credit Hours).

Prerequisites: Math 1215 or (1215X and 1215Y and 1215Z) or ACT Math =>22 or SAT Math Section =>540 or AC-CUPLACER Next-Generation Advanced Algebra and Functions =239-248. Check with your adviser to make sure you meet the requirements.

Get To Know Your Professor

I am Dr. Ariel Ramirez, an Assistant Professor of Mathematics at UNM-Valencia. I grew up in Chicago, Illinois. My Bachelor's degree in Astronomy is from The University of Illinois at Urbana-Champaign, my Master's degree in Mathematics is from the University of Illinois at Chicago, and my Ph.D. in Mathematics Education from Illinois State University. I have taught college-level mathematics at the undergraduate and graduate levels since 2000.

Course Outcomes

The courses serves as preparation for Math 1240 and Math 1430. In this course, students will build on their knowledge of polynomial, rational, absolute value, radical, exponential and logarithm functions in several contexts. A complete list of the Student Learning Objectives for this course is given at the end of this syllabus.

Course Materials & Requirements

Textbook:
"College Algebra: Concepts Through Functions" 4th edition, by Sullivan & Sullivan, 2019: Pearson Publishing.

Required: Appropriate MyMathLab access code (do not purchase a generic code, in this case the code is book specific). You should be able to access the textbook through REDSHELF. This access will provide you with the e-text and online courseware. See https://canvasinfo.unm.edu/external-apps/redshelf-index.html or canvas.unm.edu

Contents

Course Materials & Requirements (continued)

Technical Requirements:
Computer

A high-speed Internet connection is highly recommended. Supported browsers include Chrome, Edge, Firefox, Safari, and Internet Explorer. Any computer capable of running a recently updated web browser should be sufficient to access your online course. However, remember that processor speed, amount of RAM, and Internet connection speed can *greatly* affect performance. ***Some programs that use mathematics will not work well on mobile devices such as smartphones or tablets.***

Microsoft Office products are available free for all UNM students (more information on the UNM IT Software Distribution and Downloads page). Please update your contact information in Loboweb: MyUNM. When you log into MyUNM, Enter LoboWeb. Click on the Personal Information link to make sure your contact information is up to date. Laptops may be available for checkout for the Fall semester from the UNM-Valencia Library. Contact the librarians for more information.

Technical Support

♦ For UNM Learn Technical Support: (505) 277-0857 (24/7) or use the "Create a Tech Support Ticket" link in your course.
♦ For UNM-Valencia IT Support: (505)925-8911
♦ For UNM Web Conference Technical Help: (505) 277-0857

Classroom Policies

Attendance / Participation (10%)
You are expected to be <u>on time</u> for each class, stay the <u>entire</u> class, have the necessary course materials on hand, and participate in the lecture or group activities to receive full credit for attendance each day.
Absences: If you know ahead of time you will miss a class, send me an email indicating the date of the absence to receive an excused absence.

Arrange before the next class meeting to get notes from a classmate. The student bears full responsibility for the material and information covered in class.

Each student starts with 100 attendance points. Attendance is taken at the **beginning** of class. Eight attendance points are deducted for each unexcused absence; Four attendance points for tardiness.

Online Homework (25%)
Homework is assigned nearly every week based on the course outline. Weekly assignments in MyMathLab (MML) must be completed not later than the indicated date. **Each homework assignment is worth 25 points**. The lowest homework grade will be dropped. You will not be able to go back to improve your grade after the due date.

Classroom Policies (continued)

In-Class Group Assignments (10%)
During the semester, we will have several in-class assignments. These assignments will further develop your conceptual understanding of the topics presented in the course. You will work in groups between two and three students. **You must be present to participate and receive any credit**. Each in-class assignment is worth 25 points. Each group member gets the same grade.
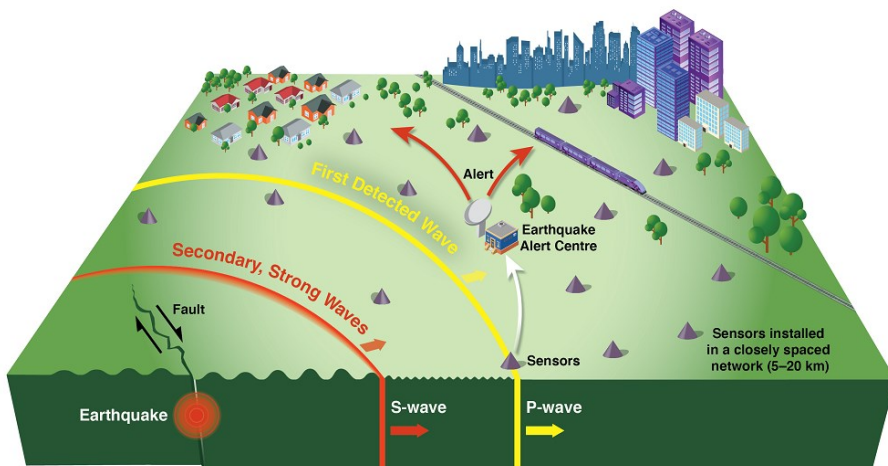
Midterm Exam (20%)
The midterm is worth 100 points. If you are ill or an unexpected event happens, and you cannot attend the exam, you have one week to make it up.

Final Exam (25%)
The final exam will cover all the topics in the course. It will be based on the exams, and homework.

Grading

COURSE AVERAGES:

Attendance/Class Participation	10%
MyMathLab Online Homework	25%
Written Homework	10%
In-Class Group Assignments	10%
Midterm Exam	20%
Cumulative Final Exam	25%
Total	**100%**

GRADING SCALE:

Letter Grade Weighted Average

A+	[98,100]	A	[92,98)	A-	[90,92)
B+	[88,90)	B	[82,88)	B-	[80,82)
C+	[78,80)	C	[72,78)	C-	[70,72)
D+	[68,70)	D	[60,68)		
F	[0,60)				

University Policies

COVID-19 Health and Awareness
COVID-19 Health and Awareness. UNM is a mask friendly, but not a mask-required, community. To be registered or employed at UNM, Students, faculty, and staff must all meet UNM's Administrative Mandate on Required COVID-19 vaccination. If you are experiencing COVID-19 symptoms, please do not come to class. If you have a positive COVID-19 test, please stay home for five days and isolate yourself from others, per the Centers for Disease Control (CDC) guidelines. If you need to stay home, please contact me at aramirez8@unm.edu. I can work with you to provide alternatives for course participation and completion. UNM faculty and staff know that these are challenging times. Please let me, an advisor, or another UNM staff member know that you need support so that we can connect you to the right resources. Please be aware that UNM will publish information on websites and emails about changes to our public health status and community response.

Support:
PASOS Resource Center (505) 925-8546, mailto:pasos@unm.edu. The Resource Center is an on-campus center that serves as a "one-stop" for all non-academic needs of UNM-Valencia students.
LoboRESPECT Advocacy Center (505) 277-2911 can offer help with contacting faculty and managing challenges that impact your UNM experience.

Accommodations:
UNM is committed to providing courses that are inclusive and accessible for all participants. As your instructor, it is my objective to facilitate an accessible classroom setting in which students have full access and opportunity. If you are experiencing physical or academic barriers or concerns related to mental health, physical health, and/or COVID-19, please consult with me after class, via email/phone, or during office/drop-in hours (I am not legally permitted to inquire about the need for accommodations). We can meet your needs in collaboration with the UNM Valencia Campus community (505) 925-8910 and/or the Accessibility Resource Center (https://arc.unm.edu/) at arcsrvs@unm.edu or by phone (505) 277-3506.

Title IX: Our classroom and university should always be spaces of mutual respect, kindness, and support, without fear of discrimination, harassment, or violence. Should you ever need assistance or have concerns about incidents that violate this principle, please access the resources available to you on campus. Please note that because UNM faculty, TAs, and Gas are considered "responsible employees" by the Department of Education, any disclosure of gender discrimination (including sexual harassment, sexual misconduct, and sexual violence) made to a faculty member, TA, or GA must be reported by that faculty member, TA, or GA to the university's Title IX coordinator. For more information on the campus policy regarding sexual misconduct, please see https://policy.unm.edu/university-policies/2000/2740.html. **Support:** LoboRESPECT Advocacy Center and the support services listed on its website, the Women's Resource Center, and the LGBTQ Resource Center all offer confidential services and reporting.
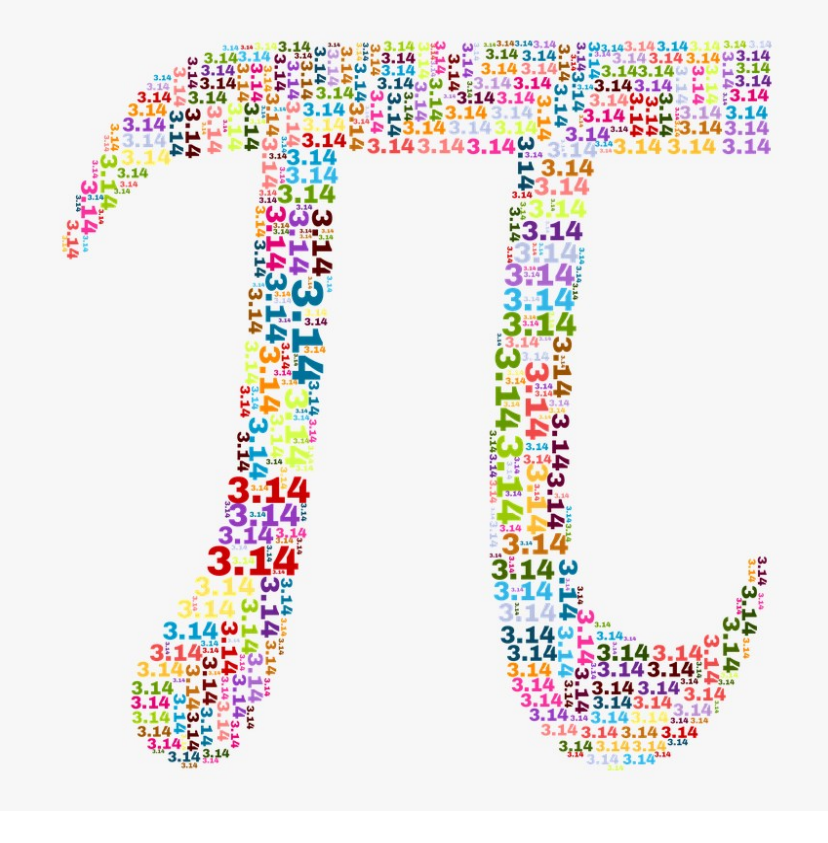
University Policies (continued)

Land Acknowledgement: Founded in 1889, the University of New Mexico sits on the traditional homelands of the Pueblo of Sandia. The original peoples of New Mexico Pueblo, Navajo, and Apache since time immemorial, have deep connections to the land and have made significant contributions to the broader community statewide. We honor the land itself and those who remain stewards of this land throughout the generations and also acknowledge our committed relationship to Indigenous peoples. We gratefully recognize our history.

Resource: Division for Equity and Inclusion.

Citizenship and/or Immigration Status: All students are welcome in this class regardless of citizenship, residency, or immigration status. Your professor will respect your privacy if you choose to disclose your status. As for all students in the class, family emergency-related absences are normally excused with reasonable notice to the professor, as noted in the attendance guidelines above. UNM as an institution has committed to the success of all our students, including members of our undocumented community. The Administration's welcome is found on our website: http://undocumented.unm.edu/.

Copyright Issues
All materials in this course fall under copyright laws and should not be downloaded, distributed, or used by students for any purpose outside this course. The UNM Copyright Guide has additional helpful information on this topic. https://copyright.unm.edu

Accessibility Statements
Blackboard's Accessibility statement https://www.blackboard.com/blackboard-accessibility-commitment
Microsoft's Accessibility statement https://www.microsoft.com/en-us/accessibility/

Academic Integrity
Having academic integrity is paramount to your success in any class. Plagiarism or cheating is not tolerated. Any instance of this will result in a grade of zero for that assignment.
Any student judged to have engaged in academic dishonesty in course work may receive a reduced or failing grade for the work in question or for the course.

Academic Dishonesty is defined as:
"Academic dishonesty" includes, but is not limited to, dishonesty in quizzes, tests, or assignments; claiming credit for work not done or done by others; hindering the academic work of other students; misrepresenting academic or professional qualifications within or without the University; and nondisclosure or misrepresentation in filling out applications or other University records.
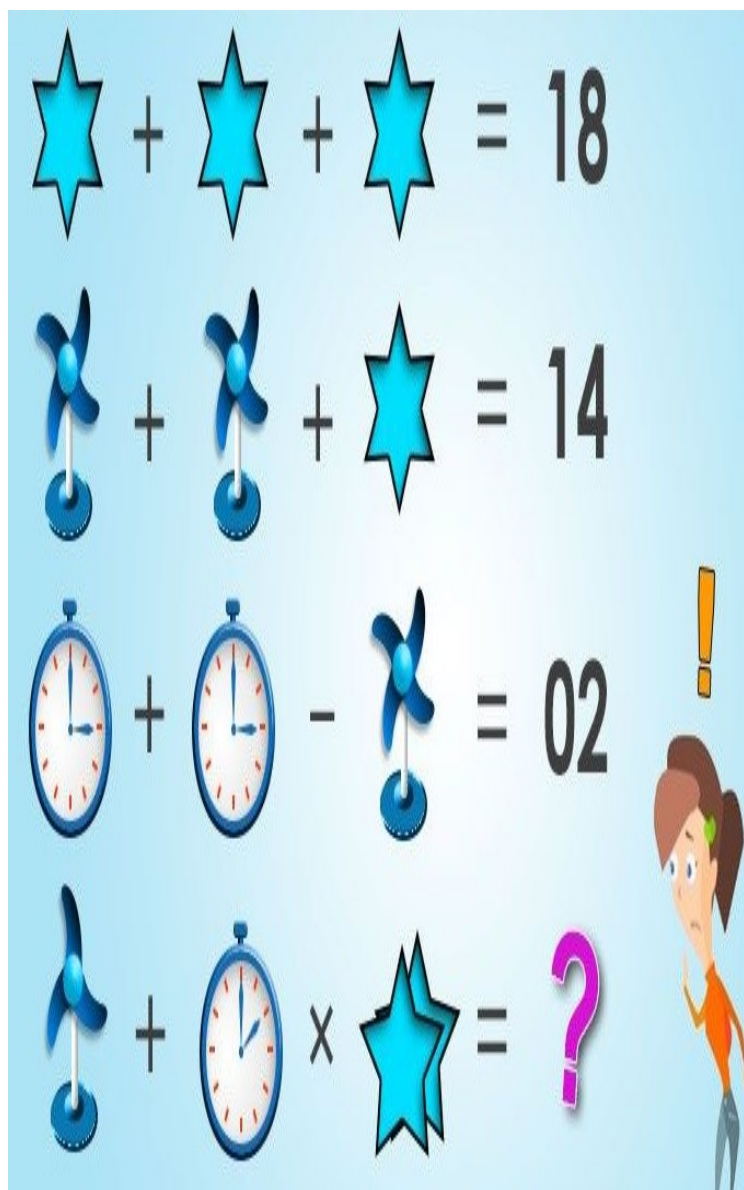
University Policies (continued)

Respectful and Responsible Learning: We all have a shared responsibility for ensuring that learning occurs safely and equitably. UNM has important policies to preserve and protect the academic community, especially policies on student grievances (Faculty Handbook D175 and D176), academic dishonesty (FH D100), and respectful campus (FH C09).

These are in the *Student Pathfinder* (https://pathfinder.unm.edu) and the *Faculty Handbook* (https://handbook.unm.edu). Please ask for help understanding and avoiding plagiarism or academic dishonesty, which can have very serious consequences.

Support: Center for Academic Program Support (CAPS). Many students have found that time management workshops can help them meet their goals (consult CAPS website under "services").
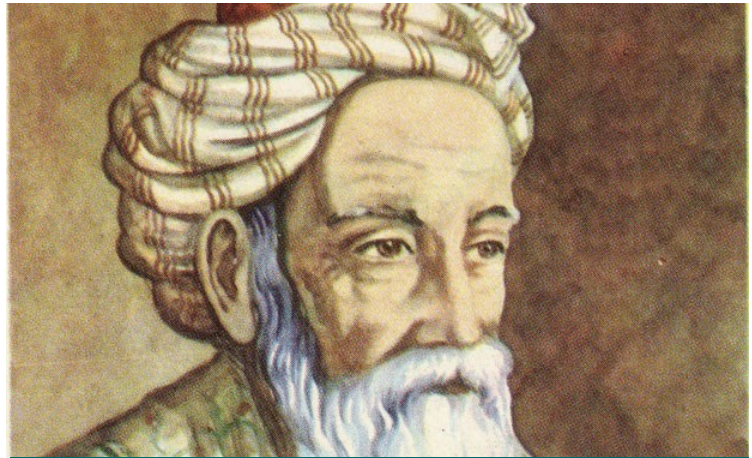
Omar Khayyam 1048-1131
Khayyam was an astronomer, astrologer, physician, philosopher, and mathematician. In 1070, he published *Treatise on Demonstration of Problems of Algebra and Balancing*. In it he showed that a cubic equation can have more than one solution. <*www.famousscientists.org/omar-khayyam/>*.

Connecting to Campus and Finding Support: UNM-Valencia has many resources and centers to help you thrive, including opportunities to get involved, mental health resources, academic support including tutoring, resource centers, free food at Valencia Campus Food Pantry, and jobs on campus. Your advisor, staff at the resource centers, and I can help you find the right opportunities for you.

EXPECTATIONS: Students are expected to conduct themselves in a polite, courteous, professional and collegial manner. **Cell phones must be set on silent and be out of sight during class. No food or drink is allowed in the computer labs.**

Credit-hour Statement: This is a three-credit-hour course. Class meets for two 75-minute direct instruction sessions for sixteen weeks during the semester. Please plan for a minimum of six hours of out-of-class work (or homework, study, assignment completion, and class preparation) each week.

Student Resources: If you are struggling in this course, do not be afraid to ask for help!
- Office Hours: See my office hours listed at the beginning of this syllabus.
- Form study groups: You may work together with other members of our class.

Tutoring is available to you in math, science, writing, and other subjects through the Learning Commons: Learning and STEM Centers and Writing Center. In-person tutoring is in these centers in the LRC (the building that also has the library). Tutoring in Zoom and, for writing, through email is also available.

Tutoring is a fantastic way to use your resources and set yourself up to learn deeply and well in your courses.

To schedule an appointment, please go to Learning Commons Bookings. If you are making an email appointment with the Writing Center, email your draft to tutor@unm.edu after you fill out the form above.

If you have difficulty with the scheduling link above, would like an appointment in a subject not listed at that link, or have a question, email tutor@unm.edu. You'll get answers during business hours, Monday through Friday.

The webpage, with more details about available hours, is here: Learning Commons: Tutoring Services webpage.

Center for Academic Program Support (CAPS). Many students have found that time management workshops can help them meet their goals (consult (CAPS) website under "services").

Math 1220: College Algebra (*Course outline is subject to change)*

Week	Dates	Sections / Topics	Assignments
1	1/17-1/19 T/Th	Introduction Review	
2	1/24-1/26 T/Th	Sec. 1.1: Functions Sec. 1.2: The Graph of a Function	MML homework 1 due
	1/27 F	**Last day to add a course (5pm)**	
3	1/31-2/2 T/Th	Sec. 1.3: Properties of Functions Sec. 1.4: Library of Functions:; Piecewise-defined Functions	MML homework 2 due Written HW #1 due In-Class Assignment #1
	2/3 F	**Last day to drop a course without a grade (5pm)**	
4	2/7-2/9 T/Th	Sec. 1.5: Graphing Techniques: Transformations Sec. 2.1: Properties of Linear Functions and Linear Models	MML homework 3 due Written HW #2 due
5	2/14-2/16 T/Th	Sec. 2.3: Quadratic Functions and their Zeros Sec. 2.4: Properties of Quadratic Functions	MML homework 4 due Written HW #3 due In-Class Assignment #2
6	2/21-2/23 T/Th	Sec. 2.5: Inequalities Involving Quadratic Functions Sec. 2.8: Equations and Inequalities Involving the Absolute Value	MML homework 5 due Written HW #4 due
7	2/28-3/2 T/Th	Sec. 3.1: Polynomial Functions and Models	MML homework 6 due Written HW #5 due In-Class Assignment #3
8	3/7-3/9 T/Th	*Review Exam*	MML homework 7 due
		3/13 – 3/19 Spring Break	
9	3/21-3/23 T/Th	Sec. 3.4: Properties of Rational Functions Sec. 3.5: The Graph of a Rational Function	
10	3/28-3/30 T/Th	Sec. 3.6: Polynomial and Rational Inequalities	MML homework 8 due Written HW #6 due
11	4/4-4/6 T/Th	Sec. 4.1: Composite Functions Sec. 4.2: One-to-One Functions; Inverse Functions	MML homework 9 due Written HW #7 due In-Class Assignment #4
12	4/11-4/13 T/Th	Sec. 4.3: Exponential Functions Sec. 4.4: Logarithmic Functions	MML homework 10 due Written HW #8 due
	4/14 F	**Last day to drop without Student Success Permission (5pm)**	
13	4/18-4/20 T/Th	Sec. 4.5: Properties of Logarithms	MML homework 11 due Written HW #9 due In-Class Assignment #5
14	4/25-4/27 T/Th	Sec. 4.6: Logarithmic and Exponential Equations	MML homework 12 due Written HW #10 due
15	5/2-5/4 T/Th	*Review*	MML homework 13 due
	5/5 F	**Last day to drop with Dean's permission/change grade mode with form (5pm)**	
16		**Final Exam Tuesday 5/9 10:30—12:30pm**	

Course Student Learning Outcomes

Upon successful completion of the course, students will be able to:

1. **Use function notation; perform function arithmetic, including composition; find inverse functions.**

2. **Identify functions and their transformations given in algebraic, graphical, numerical, and verbal representations, and explain the connections among these representations.**

3. **Graph and interpret key feature of functions, e.g., intercepts, leading term, end behavior, asymptotes, domain and range.**

4. **Solve equations algebraically to answer questions about graphs, and use graphs to estimate solutions to equations.**

5. **Solve contextual problems by identifying the appropriate type of function given the context and creating a formula based on the information given.**

6. **Communicate mathematical information using proper notation and verbal explanations.**