

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

Tutoring Hours

T/Th 1—2 pm (LRC)

Or by Appointment



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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 \Rightarrow 22 or SAT Math Section \Rightarrow 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 Associate 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 course serves as preparation for Math 1230, 1240 and 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" 5th edition, by Sullivan & Sullivan, 2024: 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

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.

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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 on time for each class, stay the entire 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%)

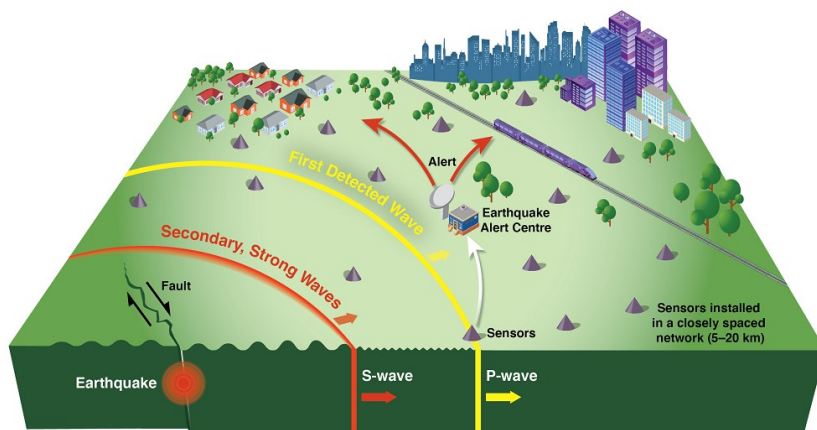
Homework is assigned nearly every week based on the course outline. Weekly assignments in MyMath-Lab (MML) must be completed not later than the indicated date. **Each homework assignment is worth 25 points.** The lowest homework grade will be dropped. You will not be able to go back to improve your grade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

Classroom Policies (continued)

Written Homework (15%)

A separate written homework is to be completed as indicated on the outline. The written homework aims to determine if you understand the concepts correctly by working with application problems. Each homework assignment is worth 20 points. I will not grade illegible homework.

Late homework has a week's grace period and will receive a 20% penalty.



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 (30%)

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	15%
Midterm Exam	20%
Cumulative Final Exam	30%
Total	100%

GRADING SCALE:

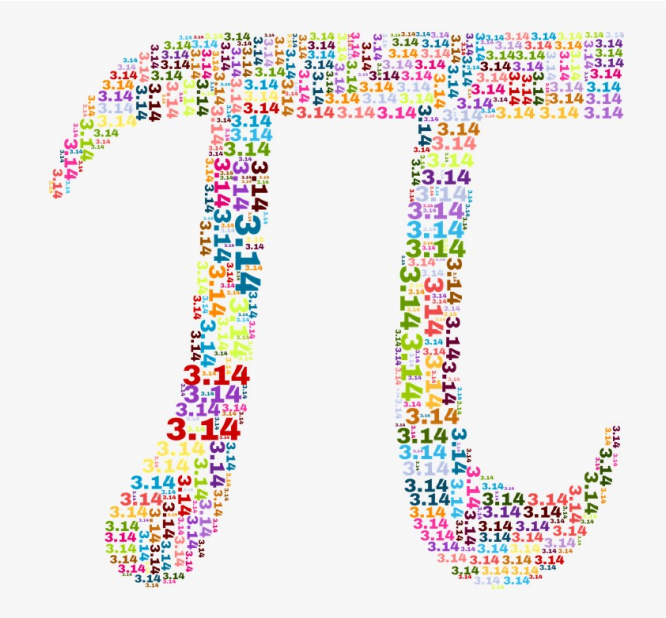
Letter Grade Weighted Average

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

Wellness

If you do need to stay home due to illness or are experiencing a wellness challenge, please take advantage of the resources below. You can communicate with me at aramirez8@unm.edu and I can work with you to provide alternatives for course participation and completion. Let me, an advisor, or another UNM staff member know that you need support so that we can connect you to the right resources. UNM is a mask friendly, but not a mask required, community. If you are experiencing COVID-19 symptoms, please do not come to class.



Student Health and Counseling (SHAC) at (505) 277-3136.

TimelyCare: Free 24/7 virtual care services (medical, emotional support, health coaching, self-care, basic needs support).

LoboRESPECT Advocacy Center (505) 277-2911: help with contacting faculty and managing challenges that impact your UNM experience.

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.

Accommodations:

UNM is committed to providing equitable access to learning opportunities for students with documented disabilities. As your instructor, it is my objective to facilitate an

inclusive classroom setting in which students have full access and opportunity to participate. To engage in a confidential conversation about the process for requesting reasonable accommodations for this class and/or program, please contact the [UNM-Valencia Equal Access Services](#) (Sarah Clawson, Coordinator), at (505) 925-8840 or by email at sjclawson@unm.edu. Or the UNM-Albuquerque Accessibility Resource Center (<https://arc.unm.edu/>) at arcsrvs@unm.edu or by phone at 505-277-3506.

Title IX: The University of New Mexico and its faculty are committed to supporting our students and providing an environment that is free of bias, discrimination, and harassment. The University's programs and activities, including the classroom, should always provide a space of mutual respect, kindness, and support without fear of harassment, violence, or discrimination. Discrimination on the basis of sex includes discrimination on the basis of assigned sex at birth, sex characteristics, pregnancy and pregnancy-related conditions, sexual orientation, and gender identity. If you have encountered any form of discrimination on the basis of sex, including sexual harassment, sexual assault, stalking, domestic or dating violence, we encourage you to report this to the University. You can access the confidential resources available on campus at the LoboRESPECT Advocacy Center (<https://loborespect.unm.edu>), the Women's Resource Center (<https://women.unm.edu>), and the LGBTQ Resource Center (<https://lgbtqrc.unm.edu>). If you speak with an instructor (including a TA or a GA) regarding an incident connected to discrimination on the basis of sex, they must notify UNM's Title IX Coordinator that you shared an experience relating to Title IX, even if you ask the instructor not to disclose it. The Title IX Coordinator is available to assist you in understanding your options and in connecting you with all possible resources on and off campus. For more information on the campus policy regarding sexual misconduct and reporting, please see <https://policy.unm.edu/university-policies/2000/2740.html> and CEO's [website](#).

If you are pregnant or experiencing a pregnancy-related condition, you may contact UNM's Office of Compliance, Ethics, and Equal Opportunity at ceo@unm.edu. The CEO staff will provide you with access to available resources and supportive measures and assist you in understanding your rights.

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/>.

Accessibility Statements

[Blackboard's Accessibility statement](https://www.blackboard.com/blackboard-accessibility-commitment) <https://www.blackboard.com/blackboard-accessibility-commitment>

[Microsoft's Accessibility statement](https://www.microsoft.com/en-us/accessibility/) <https://www.microsoft.com/en-us/accessibility/>

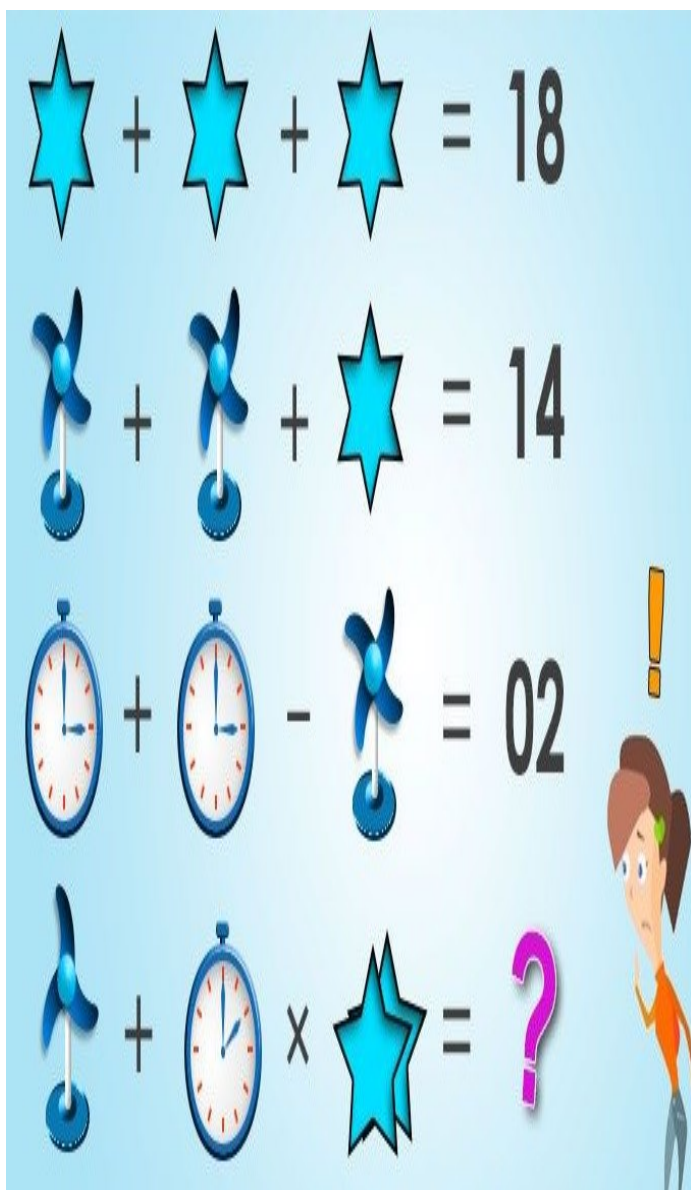
Academic Integrity

Responsible Learning and Academic Honesty: Cheating and plagiarism (academic dishonesty) are often driven by lack of time, desperation, or lack of knowledge about how to identify a source. Communicate with me and ask for help, even at the last minute, rather than risking your academic career by committing academic dishonesty. Academic dishonesty involves presenting material as your own that has been generated on a website, in a publication, by an artificial intelligence algorithm (AI), by another person, or by otherwise breaking the rules of an assignment or exam. It is a [Student Code of Conduct](#) violation that can lead to a disciplinary procedure. When you use a resource (such as an AI, article, a friend's work, or a website) in work submitted for this class, document how you used it and distinguish between your original work and the material taken from the resource.

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:

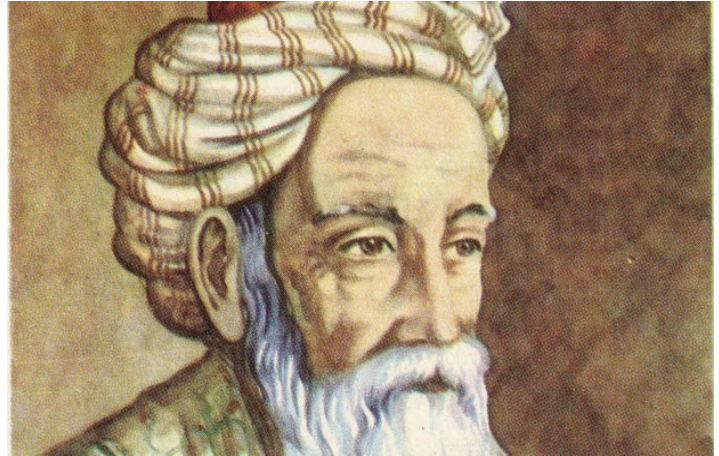
"Academic dishonesty" includes, but is not limited to, dishonesty in quizzes, tests, or assignments; claiming credit for work not done or done by others; hindering the academic work of other students; misrepresenting academic or professional qualifications within or without the University; and nondisclosure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



University Policies (continued)

Respectful and Responsible Learning:

I am committed to building with you a positive classroom environment in which everyone can learn. I reserve the right to intervene and enforce standards of respectful behavior when classroom conduct is inconsistent with University expectations [and/or classroom community agreements]. [Interventions and enforcement may include but are not limited to required meetings to discuss classroom expectations, written notification of expectations, and/or removal from a class meeting.](#) Removal from a class meeting will result in an unexcused absence. [Insert number] or more unexcused absences may result in permanent removal and a drop from the course (see attendance policy). The University of New Mexico ensures freedom of academic inquiry, free expression and open debate, and a respectful campus through adherence to the following policies: [D75: Classroom Conduct](#), [Student Code of Conduct](#), [University Policy 2240 - Respectful Campus](#), [University Policy 2210 - Campus Violence](#).



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.

Making use of 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](#) Resources to support study skills and time management are available through [Student Learning Assistance](#) at the Center for Teaching and Learning in Zimmerman Library or online.

Week	Dates	Sections / Topics	Assignments
1	8/20-8/22 T/Th	Introduction Review	
2	8/27-8/29 T/Th	Sec. 1.1: Functions Sec. 1.2: The Graph of a Function	MML homework #1 due 9/03 5pm
	8/30 F	Last day to add a course (5pm)	
3	9/3-9/5 T/Th	Sec. 1.3: Properties of Functions Sec. 1.4: Library of Functions;; Piecewise-defined Functions	MML homework #2 due 9/09 5pm Written HW #1 due 9/05
	9/6 F	Last day to drop a course without a grade (5pm)	
4	9/10-9/12 T/Th	Sec. 1.5: Graphing Techniques: Transformations Sec. 2.1: Properties of Linear Functions and Linear Models	MML homework #3 due 9/16 5pm Written HW #2 due 9/12
5	9/17-9/19 T/Th	Sec. 2.3: Quadratic Functions and their Zeros Sec. 2.4: Properties of Quadratic Functions	MML homework #4 due 9/23 5pm Written HW #3 due 9/19
6	9/24-9/26 T/Th	Sec. 2.5: Inequalities Involving Quadratic Functions Sec. 2.6: Quadratic Models	MML homework #5 due 9/30 5pm Written HW #4 due 9/26
7	10/1-10/3 T/Th	Sec. 2.8: Equations and Inequalities Involving the Absolute Value Review	MML homework #6 due 10/07 5pm Written HW #5 due 10/03
8	10/8 T	Exam	MML homework #7 due 10/14 5pm
10/10- 10/11 Fall Break			
9	10/15-10/17 T/Th	Sec. 3.1: Polynomial Functions and Models Sec. 3.5: Properties of Rational Functions	
10	10/22-10/24 T/Th	Sec. 3.6: The Graph of a Rational Function	MML homework #8 due 10/24 5pm Written HW #6 due 10/24
11	10/29-10/31 T/Th	Sec. 4.1: Composite Functions Sec. 4.2: One-to-One Functions; Inverse Functions	MML homework #9 due 11/04 5pm Written HW #7 due 10/31
12	11/5-11/7 T/Th	Sec. 4.3: Exponential Functions Sec. 4.4: Logarithmic Functions	MML homework #10 due 11/11 5pm Written HW #8 due 11/7
	11/8 F	Last day to drop without Student Success Permission (5pm)	
13	11/12-11/14 T/Th	Sec. 4.5: Properties of Logarithms	MML homework #11 due 11/18 5pm Written HW #9 due 11/14
14	11/19-11/21 T/Th	Sec. 4.6: Logarithmic and Exponential Equations	MML homework #12 due 11/25 5pm Written HW #10 due 11/21
15	11/26 T	Sec. 4.7: Financial Models	MML homework #13 due 12/02 5pm
11/28- 11/29 Thanksgiving Holiday			
16	12/3-12/5 T/Th	Review	
	12/5 Th	Last day to drop with Dean's permission/change grade mode with form (5pm)	
17	12/12 Th	Final Exam Tuesday 12/12 10:30 am—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.**