

MATH 1118: Math for Elementary and Middle School Teachers I

Instructor

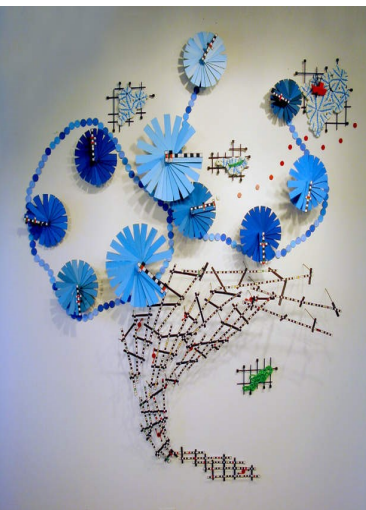
Dr. Ariel Ramirez
 aramirez8@unm.edu
 Office: LRC 172

Class Details

Tuesday/Thursday
Class Time: 9:00-11:45am
 Room: Zoom Lecture
Zoom ID: 971 2303 7489

Office Hours

W 11:00 am -12:00 pm
Zoom ID: 980 0701 0566



"Happy Dog" - Nathalie Miebach

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Course Description

This course offers an in-depth look rational numbers, arithmetic operations (addition, subtraction, multiplication, and division), and basic geometric concepts. Problem solving is emphasized throughout. (3 Credit Hours).

Prerequisites/placement: Successful completion of MATH 021/022 or Math 100.



Course Outcomes

Goal 1: Represent numbers and operations with models.

SLO 1: Use visual models, including physical objects, drawings of counts, lengths, and area, number lines, and symbols to represent numbers and operations, and flexibly move between representations.

SLO 2: Explain the relationship between contexts and the appropriate mathematical operations.

Goal 2: Identify and use the deeper structures of arithmetic.

SLO 1: Analyze and perform multiple methods for doing addition, subtraction, multiplication, and division.

SLO 2: Analyze student work, assess the validity of arguments, and identify mathematical misconceptions in mistakes.

SLO 3: Describe and use the relationships between operations to represent and solve problems.

SLO4: Describe and use strategies for mental computation and estimation using fact families, the structure of base-ten numbers, and the properties of arithmetic.

Goal 3: Explain concepts in arithmetic.

SLO 1: Explain procedures for doing addition, subtraction, multiplication and division with base-10 numbers using correct mathematical terminology and notation.

SLO 3: Explain why the commutative and associative properties of addition and multiplication and the distributive property of multiplication over addition make sense.

SLO 4: Explain how estimation and rounding work using models and correct mathematical terminology and notation.

SLO 4: By the end of the course, students will be able to communicate how various mathematical concepts are interconnected and describe the application of mathematics in a diverse range of fields.

Goal 4: Explain concepts in geometry.

SLO 1: Describe, using appropriate vocabulary and representations, how points, lines, and angles relate to each other and to applications in the real world.

SLO 2: Explain different ways to classify two-dimensional shapes based on their properties.

Classroom Policies

Attendance / Participation

- You are expected to be on time to each class and stay the entire class, have the necessary course materials on hand, and participate in the lecture and/or group activities.
- If you know ahead of time you will miss a class, send me an email indicating the date of the 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 80 attendance points. Attendance is taken at the **beginning** of class. Five attendance points are deducted for each unexcused absence; 3 attendance points for tardiness.
- Students are expected to be actively engaged in class. Class sessions may include discussions, activities, group assignments, and/or individual assignments.

Homework

- Homework is assigned nearly every week at the end of the week.
- The homework will be due the following week before the beginning of class.
- **Late homework may receive a 25% penalty.**

Group Assignments

- There will be 2 small assignments to be completed in a group.
- Groups will be between two and three students.
- These assignments will further develop your conceptual understanding of the topics presented in the course.
- **You must be present to participate**



abcgallery.com - Internet's biggest art collection

"Gorge Improvisation" - Kandinsky 1914

Exams/Final Exam

- One exam will be given during the semester. Students are expected to clearly show their work.
- All of the tests (including the final exam) will be online and will follow a specific procedure. Information on this will be disseminated later in the course. All students are expected to show all work to get full credit.
- If you are unable to take a test, you must notify me in advance of the scheduled test. I will determine if and when a make-up test is to be administered.
- The final exam in this class is worth 150 points. The sections covered will be communicated as we near the end of the semester.
- Permission to take the final exam other than as scheduled occurs only under extenuating circumstances as approved by me. Emergency situations will be considered on an individual basis.

Classroom Policies (cont'd)

Grading Distribution & Scale

Attendance	80 points
Homework	240 points
Group Assignments	80 points
Exam	150 points
<u>Final Exam</u>	<u>150 points</u>
Total	700 points

GRADING SCALE: Students in this course will receive the following grades:

A	90 – 100%
B	80 – 89%
C	70 - 79%
D	60-69%
F	0-59%

Course Materials

Textbook(s):

- ◆ Bassarear, T., and Moss, M. (2020). Mathematics for elementary school teachers., 7th edition. Cengage Learning. Boston, MA.

Student Resources

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

- Office Hour: See my office hour listed at the beginning of this syllabus.
- Form study groups: You may work together with other members of our class.
- Free Tutoring: The Math Center at Valencia campus has free tutoring available online to help with your course content questions as well as questions about using tools. Send an email to tutor@unm.edu to schedule an appointment or you can call 505-925-8907 for more information
- Student Services: There are various services provided in our Student Services Department. See below about equal access. Also, we have a testing center, advising, and career placement available: [Valencia Student Services](#)



The Mayans Number System

The Mayan number system dates back to the fourth century and was approximately 1,000 years more advanced than the Europeans of that time. This system is unique to our current decimal system, which has a base 10, in that the Mayan's used a vigesimal system, which had a base 20. This system is believed to have been used because, since the Mayan's lived in such a warm climate and there was rarely a need to wear shoes, 20 was the total number of fingers and toes, thus making the system workable. Therefore two important markers in this system are 20, which relates to the fingers and toes, and five, which relates to the number of digits on one hand or foot. The Mayan's were also the first to symbolize the concept of nothing (or zero). The most common symbol was that of a shell () but there were several other symbols (e.g. a head). It is interesting to learn that with all of the great mathematicians and scientists that were around in ancient Greece and Rome, it was the Mayan Indians who independently came up with this symbol which usually meant completion as opposed to zero or nothing.

<http://www.math.wichita.edu/history/topics/num-sys.html>

University Policies

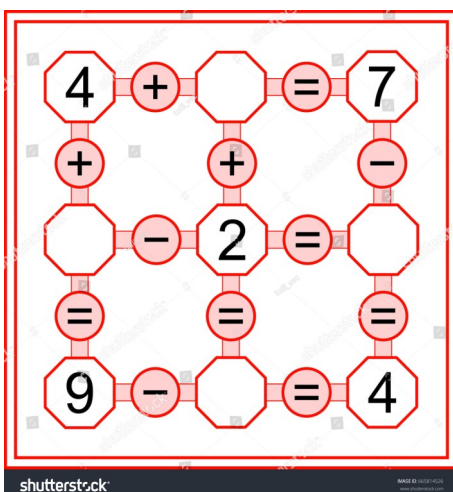
Equal Access

In accordance with University Policy 2310 and the Americans with Disabilities Act (ADA), academic accommodations may be made for any student who notifies the instructor of the need for an accommodation. It is imperative that you take the initiative to bring such needs to the instructor's attention, as I am not legally permitted to inquire.

University Policies (continued)

Equal Access

Students who may require assistance in emergency evacuations should contact the instructor as to the most appropriate procedures to follow. Contact Accessibility Resource Center at 277-3506 for additional information. If you need an accommodation based on how course requirement interact with the impact of a disability, you should contact me to arrange an appointment as soon as possible. At the appointment we can discuss the course format and requirements, anticipate the need for adjustments and explore potential accommodations. I rely on the Disability Services Office for assistance in developing strategies and verifying accommodation needs. If you have not previously contacted them I encourage you to do so.



If you are a Valencia campus student, contact Equal Access Services at Valencia Campus, Jeanne Lujan at (505)925-8910 or [Valencia Student Services](#). If you are a main campus student you can receive documentation from the main campus Accessibility Resource Center. I will not guarantee accommodation without the appropriate documentation.

Netiquette and Behavior Expectations

Netiquette and Behavior Expectations

One of the overriding principles in online conversations is to “craft your responses effectively.” It is sometimes difficult to remember that real people are reading posted messages. This is especially true of online communication where others do not have the opportunity to see body language or hear a tone of voice; therefore, they have a greater possibility of misunderstanding what is meant.

Please, follow these guidelines in all of your online responses and discussion postings.

(1) Honor everyone’s right to an opinion. (2) Respect the right of each person to disagree with others. (3) Respond honestly but thoughtfully and respectfully; use language that

others will not consider foul or abusive. You may also use emoticons to convey a lighter tone.

(4) Respect your privacy and the privacy of others by not revealing information that you deem private and which you feel might embarrass you or others. (5) Be prepared to clarify statements that might be misunderstood or misinterpreted by others.

A Special Note about Anger

- Do not send messages that you have written when you are angry, even anonymous ones. In the online world, angry messages are known as “flaming” and are considered bad behavior. Venting and flaming are two different things. It is possible to vent without sounding angry. Stick to the facts of what is causing you frustration.
- Do not send messages that are written all in upper case; this is the visual equivalent of SHOUTING. It is considered aggressive and is considered bad behavior. If you ever feel like shouting a message, take a deep breath, and wait until you have calmed down before responding. Then, respond calmly and factually.

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. Here is the link to the UNM Academic Dishonesty Policy:

<https://policy.unm.edu/regents-policies/section-4/4-8.html>. The policy states: *Each student is expected to maintain the highest standards of honesty and integrity in academic and professional matters. The University reserves the right to take disciplinary action, up to and including dismissal, against any student who is found guilty of academic dishonesty or who otherwise fails to meet the expected standards. Any student 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.*

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.*

Title IX Reporting Obligations

In an effort to meet obligations under Title IX, UNM faculty, Teaching Assistants, and Graduate Assistants are considered “responsible employees” by the Department of Education (see pg. 15 - <http://www2.ed.gov/about/offices/list/ocr/docs/qa-201404-title-ix.pdf>). This designation requires that any report of gender discrimination which includes sexual harassment, sexual misconduct and sexual violence made to a faculty member, TA, or GA must be reported to the Title IX Coordinator at the Office of Equal Opportunity (oeo.unm.edu). For more information on the campus policy regarding sexual misconduct, see: <https://policy.unm.edu/university-policies/2000/2740.html>

Course Outline

The course outline may be modified as the semester progresses.

Week	Dates	Sections / Topics	Assignments
1	6/2—6/4 T/Th	1.1: Problem Solving 2.1: Whole Numbers, 2.2: Fractions	
	6/5 F	Enrollment Cancellation for Non-Payment Last day to add a course	
2	6/9—6/11 T/Th	2.2: Fractions, 2.3: Decimals	Homework #1 Due
3	6/16—6/18 T/Th	3.1 - Understanding Addition 3.2 - Understanding Subtraction	Group Work #1 Homework #2 Due
4	6/23—6/25 T/Th	Catch-up and Review Exam	Homework #3 Due
5	6/30—7/2 T/Th	3.2 - Understanding Subtraction 4.1 - Understanding Multiplication	Homework #4 Due
	6/30 T	Last day to Drop for 100% Tuition Refund / Last day to Drop Without a 'W'	
	7/6 M	Last day to change grading options	
6	7/7—7/9 T/Th	4.2 - Understanding Division 8.1 - Building Blocks—Geometry	Group Work #2 Homework #5 Due
7	7/14—7/16 T/Th	8.2 Two Dimensional Figures Number Theory	Homework #6 Due
	7/17 F	Last day to withdraw with student services per- mission	
8	7/21—7/23 T/Th	Catch-up and Review Final Exam	