![UNM VALENCIA logo]

# MATH 193: Topics in Mathematics: Critical Thinking for Mathematics

## Professor

**Dr. Ariel Ramirez**

aramirez8@unm.edu
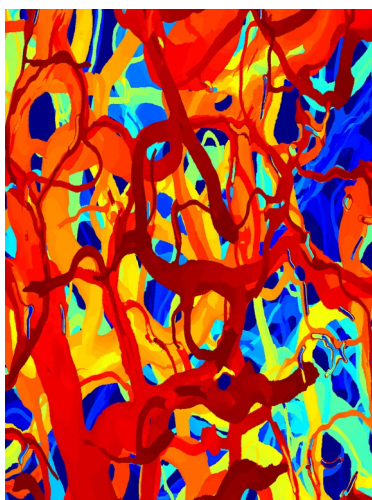Office: LRC 172

## Class Details

Monday/Wednesday
Class Time: 12-12:50pm
Room: VACTC 108

## Office Hours

**M/W 1:30-3pm (Math Center)**
**T/Th  2-3pm (Math Center)**

Mingzhai Sun & Joshua Shaevitz

## Contents

## Course Description

Critical Thinking for Math will help students develop and implement strategies for successful achievement in mathematics throughout their college career and beyond. Placement: Math 193 is required of all students who place into Math 021 (2 Credit Hours).

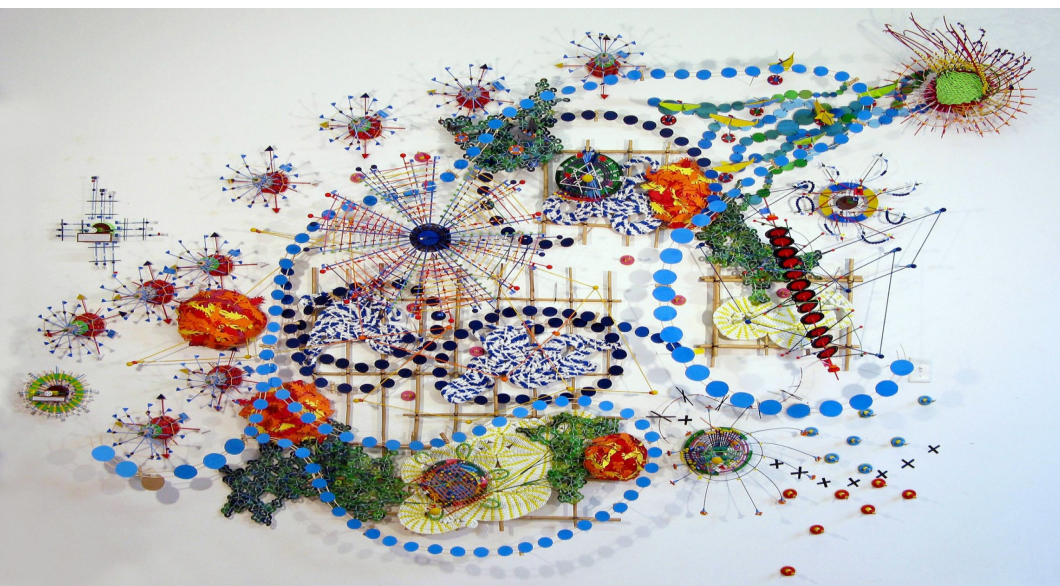**Co-requisite:** Math 021, Math 022, or Math 100.

## Course Outcomes

- Develop academic skills as a foundation for college learning.
- Employ critical thinking skills in problem solving.
- Utilize multiple problem-solving strategies and methods.
- Develop a mathematical awareness of the world.
- Expand confidence in mathematical ability.

## Instructional Methodology

A variety of approaches will be used including: class discussion, problem solving, and group work. The primary role of the professor will be to facilitate the class discussion and illustrate multiple problem solving heuristics.

*"Changing Waters– Gulf of Maine"* - Nathalie Miebach

# Classroom Policies

## Attendance / Notes / Participation
You are expected to be <u>on time</u> to each class and stay the <u>entire</u> class, have the necessary course materials on hand, and participate in the group activities.

**Absences:** I do not require you to give me any sort of documentation for missing up to 3 class days. Even if you miss class, you are still expected to complete **all** the in-class assignments.

Here are the reasons I may drop you from the class:
- If you miss the first week of the semester.
- If you miss 2 classes in the first two weeks, or 3 total class periods, you will be dropped from the class.
- **If you are dropped from Math 193, you will be dropped from Math 021/022/100 as well.**

If you added late, your counted absences start the day you registered for the class.

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

**Participation:** Participation includes
- *Attendance.* Show up to class!
- *In-Class Activities.* Each Unit in Math 465/466/544 will have an associated activity in this class. These activities need to be completed in class. If you do not finish the activity, it will be collected and you may complete it next time we meet. If you successfully complete the in-class assignment, you may begin the next assignment.
- *Questions.* Bring your questions from the homework. My job is to help you learn the material, I cannot do that unless I know where you are misunderstanding or "not getting it."

In-class activities are worth 25 points each for a total of 350 points. Participation receives 2 points for each day you do the things listed above and is worth a total of 50 points.



**Carl Friedrich Gauss  1777-1855**
Gauss worked in a wide variety of fields in both mathematics and physics incuding number theory, analysis, differential geometry, geodesy, magnetism, astronomy and optics. His work has had an immense influence in many areas.
*http://www-history.mcs.st-andrews.ac.uk/Biographies/Gauss.html*

# Support
- 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. Feel free to come by or log in for online office hours, or make an appointment to get help.
- Form study groups: You may work together with other members of our class.
- Free Tutoring: The Math Center at Valencia campus has free tutoring and open labs. Call 505-925-8907 for more information. CAPS on main campus also provides tutoring for which I can get documentation.
- 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: <u>Valencia Student Services</u>.
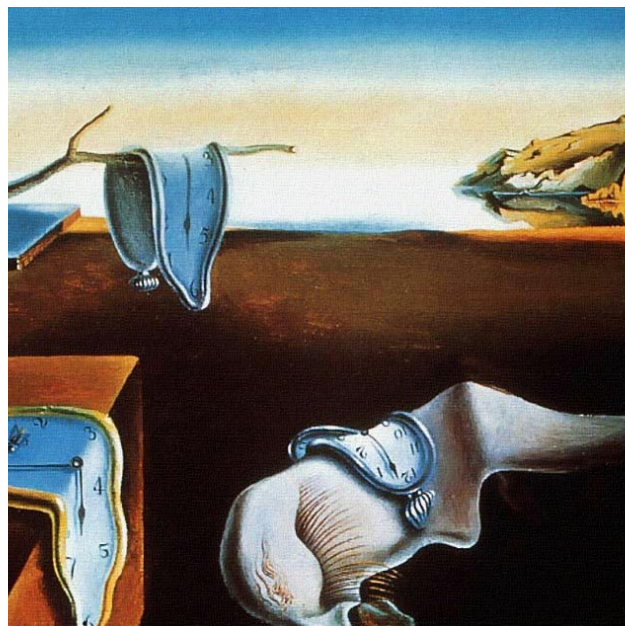
# Grading and Course Materials

**COURSE AVERAGES:**

| | |
|---|---|
| Attendance | 30% |
| Class Participation/In-Class Activities | 40% |
| Portfolio-Binder | 30% |
| **Total** | **100%** |

| Letter Grade | Overall Course Score |
|---|---|
| A | 90% or better |
| B | 80% to 89% |
| C | 70% to 79% |
| CR | 70% or better |
| NC | Less than 70% |



*The persistence of memory 1931* - Salvador Dali

**Course Material:** *Portfolio-Binder*

3-Ring binder (1-1/2 inch) 7 divider tabs, spiral (optional), notebook paper, graph paper, pencil. (Binder will be shared with Math 021/022/100 course).

**Portfolio-Binder Requirements**

1. Cover Letter
2. Essay
3. Pre-Math and Post-Math Anxiety Survey
4. Course Syllabus
5. Guided Notes/Lectures Notes from any 3 Units in Math 021/022 or Math 100
6. Formula sheet
7. In-Class Activities from any 3 Units in Math 193

# 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. 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.

# University Policies

## Collegial Behavior:
Since I assume you are all adults, I will expect from you respectful adult behavior. Engaging in disruptive or unruly behavior could result in your being asked to leave, at which time you will be counted absent and a referral will be sent to the Associate Dean of Student Services. Continuing to behave in this way could result in your being dropped from the course. Disruptive or unruly behavior includes but is not limited to: texting or talking on your cell phone at any time during class, continually talking with your neighbor when we are not working on a group activity, working on homework from another class, reading material or watching media on a mobile device not related to this course or at a time that is inappropriate, refusing to participate in the class activities.

## 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.*

*Circle Limit IV—Woodcut 1960* - M.C. Escher

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 Statement
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

# Math 193: Course Outline (subject to change as needed)

| Week | Day | Sections / Topics /Assignments |
|:---:|:---:|:---:|
| 1 | 8/20-8/22 M/W | Introduction, Number Talks Video, Ways to multiply, and Mindset. Learning Style Inventory assigned. *Unit 7 – In-class Assignment* |
| 2 | 8/27-8/29 M/W | Learning Style results, Making Mistakes, Pre-Course Math Anxiety, and Math Anxiety *Unit 2 – In-class Assignment* |
|  | 8/31 F | **Last day to add a course (5pm)** |
| 3 | 9/3-9/5 M/W | **Labor Day (No Class)** *Unit 3 – In-class Assignment* |
|  | 9/7 F | **Last day to drop a course without a grade (5pm)** |
| 4 | 9/10-9/12 M/W | Math Anxiety Part II, Math Myths, Ways of reducing anxiety, and Taking Notes *Unit 4 – In-class Assignment* |
| 5 | 9/17-9/19 M/W | Study Skills, Test Taking Strategies, and Critical Thinking Skills *Unit 5 – In-class Assignment* |
| 6 | 9/24-9/26 M/W | *Unit 6 – In-class Assignment* |
| 7 | 10/1-10/3 M/W | Work on Class Project *Unit 7 – In-class Assignment* |
| 8 | 10/8-10/10 M/W | *Review* |
|  |  | **10/11 – 10/14 Fall Break** |
| 9 | 10/15-10/17 M/W | *Unit 8 – In-class Assignment* |
| 10 | 10/22-10/24 M/W | *Unit 9 – In-class Assignment* |
| 11 | 10/29-10/31 M/W | *Unit 10 – In-class Assignment* |
| 12 | 11/5-11/7 M/W | *Unit 11 – In-class Assignment* |
| 13 | 11/12-11/14 M/W | *Unit 12 – In-class Assignment* **Portfolio Essay Due** |
| 14 | 11/19-11/21 M/W | *Unit 13 – In-class Assignment* **Course Math Anxiety Survey** |
| 15 | 11/26-11/28 M/W | *Unit 14 – In-class Assignment* **Portfolio Due** |
| 16 | 12/3-12/5 M/W | *Review* |
| 17 | 12/10 | **Final Exam Week** |