UNM Valencia
MATH 1130-501, A Survey of Mathematics
Fall 2023

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Office Location: Tome Campus LRC 107
Tutoring Hours: Tuesdays: 1225-1325, Wednesdays: 1345-1445 (Workforce Training Center), Thursdays: 1245-1315, 1500-1530, Fridays: 1330-1630 on Zoom (Office Hour Link)
Class time and location:
MECS Division Chair: Ariel Ramirez (aramirez8@unm.edu)

This is a three credit-hour course. Class meets asynchronously online for sixteen weeks during the Fall 2023 semester. Please plan for a minimum of six hours of out-of-class work (or homework, study, assignment completion, and class preparation) each week

Textbook: The text for this course is Mathematics All Around, 7th ed. by Thomas L. Pirnot. This book and courseware will be available through UNM's Inclusive Access/Redshelf process. That means that as soon as you register for this class, you will have access to the e-book and it will be charged to your bursar's account. You can find out more about this and your options at https://bookstore.unm.edu/t-1unm_inclusiveaccess.aspx.

This course comes with Inclusive Access (IA). You will receive an email that contains instructions for inclusive access to the book via the RedShelf on UNM Learn. Please, read the instructions carefully and follow what is required to have access to the book at a discounted price.

Course description: Official: This course will develop students' ability to work with and interpret numerical data, to apply logical and symbolic analysis to a variety of problems, and/or to model phenomena with mathematical or logical reasoning. Topics include financial mathematics used in everyday life situations, statistics, and optional topics from a wide array of authentic contexts.

Informal: My hope is that you will have some fun with mathematics and learn some things that you did not know before or that you may find useful. (3 Credit Hours).

Prerequisites: MATH 1215 or (1215X and 1215Y) or 1220 or 1230 or 1240 or 1350 or 1430 or 1440 or 1512 or 1522 or 2531 or ACT Math $\geq$ 22 or SAT Math Section $\geq$ 540 or ACCUPLACER Next-Generation Advanced Algebra and Functions $\geq$ 218 or ACCUPLACER Next-Generation Quantitative Reasoning, Algebra, and Statistics $\geq$ 253 LCP Math $\geq$ 30. Note: students may take 1215Y as a co-requisite.

Course Outcomes: This course is an introductory course in statistics intended for students in a wide variety of areas of study. Topics discussed include displaying and describing data, the normal curve, regression, probability, statistical inference, confidence intervals, and hypothesis tests with applications in the real world. Student Learning Objectives for this course is given at the end of this syllabus.

Other Requirements:

- Reliable access to a computer or tablet, and Internet. A computer (laptop or desktop) is recommended. Preferred browsers are Chrome, Firefox, or Safari. The preferred operating systems are Windows or Apple.

- Access to UNM Canvas requires use your UNM NetID to log into UNM Canvas. You may access it directly via `https://canvas.unm.edu/`
- Access to Zoom (through UNM).

Participation

- Spend 9-12 hours per week on this course.
- Learn or know how to navigate in Canvas, Zoom, and MyMathLab.
- Communicate with one another in group discussions and projects (if applicable).
- Keep up with course announcements and assignments.
- Use a UNM supported messaging system for all correspondence with instructor and fellow students: Lobomail or messages in Canvas.
- Communicate regularly with instructor, especially if anything arises that will keep you from completing assignments on time.
- Address technical problems immediately.
- Observe course netiquette at all times (don't be a troll).

Netiquette: One of the overriding principles in online conversations is to "craft your responses effectively." This is especially true of online communication where others do not have the opportunity to see body language or hear tone of voice; therefore, misunderstandings are more likely. Please, follow the guidelines below and those in the UNM Netiquette document in all of your online responses and discussion postings.

Coursework: In this class I am asking you to complete various homework assignments, most of which will be computational in nature. Also, there will be some written homework assignments that will be mostly applications of what you learned, as well as projects and chapter assessments. Finally, there will be a midterm and final assessment. Below are descriptions of how these will work.

- Homework: Included in this category are
    - Start Here assignments
    - Reading Assignments
    - Online computational homework in MyMathLab
    - Written homework assignments (must be uploaded in Canvas)
    - Discussion posts
    - Attendance at Instructor-Led Help Sessions
- Projects and Chapter Assignments: At the end of each chapter, you will either have a related project to complete or a chapter assessment to complete. Chapter projects will be the same for everyone and you will likely be asked to complete the projects in groups of no more than four people. I will give complete instructions about these elsewhere.
- Midterm and Final Assessments: There will be one midterm and one final exam for this course. A portion of each exam will be computational in nature and for one other portion(s) you will have a choice of completing either an essay or creating a video. Those questions will be more open-ended. Complete instructions will appear elsewhere.

Grading Procedures: In this course I will be using what is called "contract grading". This means I will not keep track of a whole bunch of points but you will need to meet certain expectations to earn the corresponding grade. To do this, I will ask you to sign your grading contract so that you know what expectations go with what course grade. In general, the contract will describe what percent of the assignments listed above you need to complete and at what level of proficiency. I will also provide rubrics so that you know how I am determining completion levels for assignments.

Support:

- Tutoring Hours: See my tutoring 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.
- Resources to support study skill and time management are available through UNM-Valencia Learning Commons (Tutoring). 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. 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").
- 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
- Many students have found that time management workshops or work with peer tutors can help them meet their goals. These and are other resources are available through PASOS (Pathways to Articulation and Sustainable Opportunities for Students), TRIO Student Support Services, and Student Learning Support at the Center for Teaching and Learning.

Instructor Response Time: I routinely check the course for postings or emails, Monday (9 am) – Friday (5 pm), and sometimes on the weekend. You can anticipate a 24 to 48-hour response from me, Monday – Thursday. I will try and respond to all weekend (Friday afternoon to Sunday) emails and postings by noon on Monday or earlier. I prefer all communication through email or Canvas Learn.

Other Important Information:
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 interacts 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, Cheryl Dilger 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.

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 Statement: To meet obligations under Title IX, UNM faculty, Teaching Assistants, and Graduate Assistants are considered "responsible employees." 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 Compliance, Ethics and Equal Opportunity (ceeo.unm.edu). For more information on the campus policy regarding sexual misconduct and reporting, see: https://policy.unm.edu/university-policies/2000/2740.html.

- Support: LoboRESPECT Advocacy Center, the Women's Resource Center, and the LGBTQ Resource Center all offer confidential services.

Respectful and Responsible Learning: We all have shared responsibility for ensuring that learning occurs safely, honestly, and equitably. Submitting material as your own work that has been generated on a website, in a publication, by an artificial intelligence algorithm, by another person, or by breaking the rules of an assignment constitutes academic dishonesty. It is a student code of conduct violation that can lead to a disciplinary procedure. Please ask me for help in finding the resources you need to be successful in this course. I can help you use study resources responsibly and effectively. Off-campus paper writing services, problem-checkers and services, websites, and AIs can be incorrect or misleading. Learning the course material depends on completing and submitting your own work. UNM preserves and protects the integrity of the academic community through multiple policies including policies on student grievances (Faculty Handbook D175 and D176), academic dishonesty (FH D100), and respectful campus (FH CO9). These are in the Student Pathfinder (https://pathfinder.unm.edu) and the Faculty Handbook (https://handbook.unm.edu).

- Support: Many students have found that time management workshops or work with peer tutors can help them meet their goals. These and are other resources are available through PASOS (Pathways to Articulation and Sustainable Opportunities for Students), TRIO Student Support Services, and Student Learning Support at the Center for Teaching and Learning.

COVID-19 Health and Awareness: COVID-19 Health and Awareness. UNM is a mask friendly, but not a mask required, community. If you are experiencing COVID-19 symptoms, please do not come to class. If you do need to stay home, please communicate with me; 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. Please be aware that UNM will publish information on websites and email about any changes to our public health status and community response
Support:

- PASOS Resource Center (505) 925-8546, pasps@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.
- Student Health and Counseling (SHAC) at (505) 277-3136. If you are having active respiratory symptoms (e.g., fever, cough, sore throat, etc.) AND need testing for COVID- 19; OR If you recently tested positive and may need oral treatment, call SHAC.
- LoboRESPECT Advocacy Center (505) 277-2911 can offer help with contacting faculty and managing challenges that impact your UNM experience

Accomodations: 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 Accessibility Resource Center at arcsrvs@unm.edu or by phone at 505-277-3506. The UNM-Valencia Equal Access Services (Sarah Clawson, Coordinator), at (505) 925-8840 or by email at sjclawson@unm.edu.

- Support: Contact me at my email or in office/check-in hours. The UNM-Valencia Equal Access Services (Sarah Clawson, Coordinator), at (505) 925-8840 or by email at sjclawson@unm.edu., Or Accessibility Resource Center (https://arc.unm.edu) at arcsrvs@unm.edu or (505) 277-3506.

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 made a core commitment to the success of all our students, including members of our undocumented community. The Administration's welcome is found on our website: https://undocumented.unm.edu.

For Military-Connected Students: There are resources on campus designed to help you succeed. You can approach any faculty or staff for help with any issues you may encounter. Many faculty and staff have completed the GREEN ZONE training to learn about the unique challenges facing military-connected students. If you feel that you need help beyond what faculty and/or staff can give you, please reach out to the Veterans Resource Center on main campus at 505-277-3181, or by email at https://vrc@unm.edu. The Veterans Coordinator at UNM-Valencia is in the Student Services Office, at 505-925-8560.

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.

Semester Dates and Deadlines:

- Spring 2023– 16-week classes (deadlines will be different for first and second 8-week classes)
- Tuesday, January 17: First day of class, classes available in Canvas
- Monday, January 16: Martin Luther King Day, no class
- Friday, January 27, by 5:00 pm: Last day to add a class or to change credit hours or grade mode in LoboWEB.
- Friday, February 3: Last day to drop without "W" grade and with 100% refund on LoboWEB

- Friday, April 14 : Last day to drop without Student Services' permission on LoboWEB. Will receive "W" grade and will be responsible for tuition for the course.
- Friday, May 5: Last day to drop with the permission form.
- Finals Week: Monday, May 8 – Saturday, May 13

MATH 1130 Course Student Learning Outcomes: Upon successful completion of the course, students will be able to:

1. Construct and analyze graphs and/or data sets.
   a. Gather and organize information.
   b. Understand the purpose and use of various graphical representations such as tables, line graphs, tilings, networks, bar graphs, etc.
   c. Interpret results through graphs, lists, tables, sequences, etc.
   d. Draw conclusions from data or various graphical representations.
2. Use and solve various kinds of equations.
   a. Understand the purpose of and use appropriate formulas within a mathematical application.
   b. Solve equations within a mathematical application.
   c. Check answers to problems and determine the reasonableness of results.
3. Understand and write mathematical explanations using appropriate definitions and symbols.
   a. Translate mathematical information into symbolic form.
   b. Define mathematical concepts in the student's own words.
   c. Use basic mathematical skills to solve problems.
4. Demonstrate problem solving skills within the context of mathematical applications.
   a. Show an understanding of a mathematical application both orally and in writing.
   b. Choose an effective strategy to solve a problem.
   c. Gather and organize relevant information for a given application.

General Education Core Curriculum Essential Skills In addition to the course learning objectives listed above, because this class meets a UNM General Education Core Curriculum requirement, activities in each unit (i.e.: discussions, assignments, and assessments) are developed so that you can demonstrate development of these essential skills:

- Critical Thinking
  ✱ Problem Setting: Delineate a problem or question to be considered critically.
  ✱ Evidence Acquisition: Identify and gather the information/data necessary to coherently address the problem or question.
  ✱ Evidence Evaluation: Evaluate the information given by sources for credibility (e.g. bias, reliability, validity) and probably truth.
  ✱ Reasoning/Conclusion: Develop conclusions and outcomes that reflect an informed, well-reasoned argument.
- Communication
  ✱ Genre and Disciplinary Conventions: Use formal and informal rules/registers appropriate for the particular audience, community, purpose, context, and kind of text and/or media at hand; use them to guide formatting, organization, and stylistic choices are present.
  ✱ Strategies for Understanding and Evaluating Messages: Apply strategies such as reading/analyzing for main points or themes; recognizing the variety of rhetorical situations and accompanying strategies that may contextualize messages; locating supportive documentation for arguments to understand and evaluate messages in terms of the rhetorical situation.
  ✱ Evaluation and Production of Arguments: Recognize and evaluate the authority of sources in their own arguments and those of others; distinguish among supported claims, unsupported claims, facts, inferences, and opinions.
- Quantitative Reasoning

✼ Communication and/or Representation of Quantitative Information: Express quantitative information symbolically, graphically, and in written or oral language.

✼ Analysis of Quantitative Arguments: Interpret, analyze and critique information or a line of reasoning presented by others.

✼ Application of Quantitative Models: Apply appropriate quantitative models to real-world or other contextual problems.

Tentative Schedule

Due dates may change if needed. Please be sure to check in Canvas for upcoming assignments that are due and when.

Week	Dates	Sections/Topics	Assignments Due
1	08/21-08/27	Orientation to Course	Start Here Meet with Instructor
2	08/28-09/03	1.1 Problem Solving	MML 1.1, readings
3	09/05-09/10	1.2 Inductive/Deductive Reasoning and Problem Solving	MML 1.2, readings Groups meet
4	09/11-09/17	3.1 and 3.2 Logic	3.1,3.2 MML, readings Group Project
5	09/18-09/24	3.3 and 3.4 Logic	3.3 Written HW, readings, Ch.3 Ind. Project
6	09/25-10/01	10.1-10.3 Apportionment	10.1,10.2 MML, 10.3 Written HW, Groups meet, readings
7	10/02-10/08	11.1-11.3 Voting Systems 10.4 Fair Division	11.1,11.2 MML 11.3 Written HW Ch. 10 Group Project readings
8	10/09-10/15	Midterm assessment	Midterm Assessment

Week	Dates	Sections/Topics	Assignments Due
9	10/16-10/22	8.1-8.3 Taxes, Interest Percent, Loans	8.1, 8.2 MML, 8.3 Written HW, readings
10	10/23-10/29	8.4 and 8.5 Annuities/ Amortization	8.4 Written HW, Ch. 8 Ind. Project, readings
11	10/30-11/05	9.1-9.4 Geometry Symmetry	9.1-9.4 MML, readings
12	11/06-11/12	9.5-9.7 Measure Fractals	9.5 MML, Fractal Project, Group meets, readings
13	11/13-11/19	13.1-13.2, 13.4 Probability, Exp. Value	13.1 MML, 9 Written HW, Ch.9 Group Project, readings
14	11/20-11/26	Thanksgiving break	
15	11/27-12/03	14.1-14.3, Data, Linear Correlation	14.1,14.2 MML, 14.3 Written HW, readings
16	12/04-12-10	Out-side Reading Big Data	Discussion readings
	12/11-12/17	Cumulative	Final Assessment