

## Math 1170    Technical Mathematics    Spring 2023

Instructor: Precious Andrew

email: pandrew@unm.edu

CRN: 51481

Class Meets: Fully Online

**MyMathLab Course id: andrew85167 (you can access this by clicking the ‘Redshelf Course Materials’ link in Canvas)**

Office Hours/Study Sessions (**feel free to stop by!**): Tuesdays and Thursdays 1:15-3:00 in-person at Valencia Campus, Room Arts and Sciences 123 (A123). Online via Zoom (See hours in Canvas) or by appointment.

### Course Description

This course will introduce a broad range of topics that students may encounter in technical and health fields. Topics covered include a review of basic arithmetic operations on whole numbers, fractions, and decimals, percent problems, measurements and conversions using the U.S. Standard and Metric systems, solving linear equations and formulas, scientific notation, basic geometry, and an introduction to right-triangle trigonometry.

**Textbook:** Mathematics for the Trades: A Guided Approach, 11th Edition, Saunders, Carman. You will need access to MyMathLab to complete online homework. **MyMathLab Course id: andrew85167**

**MECS Division Chair:** Ariel Ramirez; aramirez8@unm.edu

**Prerequisite:** Grade of C (not C-) or better in Math 100 or Math 022, or via an appropriate placement test.

**Grades:** Your grade will be based on the following allocation of points.

MyMathLab Online Homework	100 points
Written Homework (uploaded to Canvas)	100 points
Midterm Exam	100 points
Final Exam	100 points
<b>Total</b>	<b>400 points</b>

### How Grades Are Determined:

A+: 97-100%	A: 93-96%	A-: 90-92%	B+: 87-89%	B: 83-86%	B-: 80-82%
C+: 77-79%	C: 73-76%	C-: 70-72%	D+: 67-69%	D: 63-66%	D-: 60-62%
F: < 60%					

### Course Format:

**1 - You will be completing this class online.** You'll need to follow along with the schedule at the end of this document. You'll be reading your textbook to see worked out examples, watching some instructional videos, and coming to see me during my office hours listed above.

**2 – You will submit written homework from your textbook** approximately once every week or so. See the assigned problems listed on the schedule. These assignments must be organized and labeled, all work and steps must be shown, and must be presented consecutively, clearly, and legibly. **You'll need a photo to pdf scanner app like AdobeScan or CamScanner unless you own a scanner.**

**3 - You will complete online homework in MyMathLab for each section.** You'll need access to MyMathLab and must maintain it for the entire course or you will be dropped. See the due dates in MyMathLab for each assignment. **MyMathLab Course id: andrew85167. You can access this by clicking the ‘Redshelf Course Materials’ link in Canvas.**

**4 - You will complete a written midterm and cumulative final exam.** You need to keep the following days/times open for your exams: **Midterm Exam Friday, March 10, 3pm-5pm and Final Exam Monday, May 8, 3pm-5pm.** You'll print the exam from Canvas and upload a pdf of your completed exam during the designated time. **The exams are not open book or notes, and you may not use a graphing calculator, phone, the internet, etc.** You should use only your writing instrument (and a basic 4-function calculator if you so choose) to complete the exam – nothing else. The use of anything beyond

your pencil and basic calculator on the exams and final may be considered academic dishonesty, may be reported to the Dean of Students, and may be grounds for receiving an F in the course.

**Calculator/Notes Policy:** Scientific or graphing **calculators** are **not allowed** on any exams (including the final exam). If you'd like, you may use a basic, 4-function calculator on exams, but nothing more. There may be a few homework problems that require a scientific calculator, but these won't be used on exams.

**Notes,** books, cell phones, web searches, consultations with friends or tutors, etc. are also **not allowed** on exams.

**Missed Exams:** If you miss an exam, contact your instructor immediately. Make-up exams will only be given in cases of a university-excused absence or a verifiable documented emergency or illness. If you miss an exam and do not contact your instructor immediately, you may be dropped from the course.

**Homework:** This is a three credit-hour course delivered in an entirely online modality over 8 weeks during the Fall 2022 semester. Please plan for a minimum of 18 hours per week to learn course materials and complete assignments.

**Extra Credit is not offered.** Please do not ask for any extra credit.

**Attendance:** Attendance is mandatory. If a student has more than three unexcused absences, he/she may be dropped from the course. In a remote class, not submitting an assignment will be regarded as an absence. This can be a written or MyMathLab assignment.

**Student Behavior:** All students have to abide by the Student Code of Conduct: [www.pathfinder.unm.edu](http://www.pathfinder.unm.edu). According to the Code of Conduct, student activities that interfere with the rights of others to pursue their education or to conduct their University duties and responsibilities will lead to disciplinary action. This includes any activities that are disruptive to the class and any acts of academic dishonesty. Students are expected to behave in a courteous and respectful manner toward the instructor and their fellow students. The use of cell phones, headphones, smart watches, etc. is not permitted during class or exams.

**Academic Integrity:** Academic dishonesty of any kind will not be tolerated. Examples include, looking at a neighbor's exam; plagiarizing; using a calculator when not permitted; using a book, online material, and/or notes of any kind; modifying an exam after it is graded; etc. The instructor may warn an offending student, the score of the exam may be reduced, the score may be set to zero, the student may get dropped from the class, the student may get a grade of F for the class, and in most cases the incident will be reported to the Dean of Students. You should be familiar with UNM's Policy on Academic Dishonesty and the Student Code of Conduct.

**Grading:** To get full credit on graded work students must address all mathematical components presented by the problem, showing all steps and calculations. The use of proper notation, well-structured procedures, and legibility will be taken into account when assigning points.

**Grade mode and Withdrawals:** You must select your grade mode (Letter Grade, CR/NC, or Audit) within the first 2 weeks of the semester. We will not give permission to change the grade mode after the deadline. Students who are in the regular grade mode and who withdraw after the end of week 3 will receive a grade of "W". If you do not withdraw (but stop attending), you will receive a letter grade of A, B, C, D, or F (not a W). Students who are in the CR/NC grade mode and who withdraw after the end of week 3 will receive a grade of "W". If you do not withdraw (but stop attending), you will receive a letter grade of NC (not a W). See the list of all deadlines: [www.registrar.unm.edu](http://www.registrar.unm.edu)

**Accessibility Statement and 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, at (505) 925-8910 and/or The Accessibility Resource Center at [arcsrvs@unm.edu](mailto:arcsrvs@unm.edu) or by phone at 505-277-3506.

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**Extra Help and Resources:** In addition to your instructor's office hours, there is extra help available at:

- The Learning Center - <https://valencia.unm.edu/campus-resources/the-learning-center/index.html>
- UNM Valencia Library - <http://valencia.unm.edu/library/>
- 'Life Resources' - <http://valencia.unm.edu/students/student-resources.html>
- Veteran's Resource Center - [vrcc@unm.edu](mailto:vrcc@unm.edu)
- 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.
- 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.

**Title IX Reporting Obligations:** Our classroom and our 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>.

**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 do need to stay home, please communicate with me; 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 email about any changes to our public health status and community response

**MATH 1170: Student Learning Outcomes**  
**By the end of the semester, students should be able to:**

Course Goal 1: Communication

SLO 1: Students will be able to use correct mathematical notation and terminology.

SLO 2: Students will correctly interpret graphical representations of information.

SLO 3: Students will analyze solutions to equations and formulas, and give them contextual meaning.

Course Goal 2: Real Number Arithmetic

SLO 1: Students will correctly add, subtract, multiply, and divide integers.

SLO 2: Students will correctly add, subtract, multiply, and divide fractions.

SLO 3: Students will correctly add, subtract, multiply, and divide decimals

SLO 4: Students will correctly use the order of operations.

Course Goal 3: Percentages

SLO 1: Students will correctly translate English statements into equations involving percentages.

SLO 2: Students will correctly solve percent equations.

SLO 3: Students will correctly translate and solve word problems involving percentages and interpret their results.

Course goal 4: Measurements

SLO 1: Students will correctly solve word problems involving the U.S. Standard and Metric measurement systems and interpret their results,

SLO 2: Students will correctly convert between units within and between the U.S. Standard and Metric measurement systems.

SLO 3: Students will correctly create and utilize conversion factors.

SLO 4: Students will be able to solve contextual problems involving units and unit conversion, and correctly interpret their results.

Course goal 5: Algebra

SLO 1: Students will be able to successfully solve for a variable in a one-operation linear equation.

SLO 2: Students will be able to successfully solve for a variable in a two-operation linear equation.

SLO 3: Students will be able to successfully solve for a variable in a linear equation requiring multiple operations, including distribution.

SLO 4: Students will correctly solve for the indicated variable in a formula.

SLO 5: Students will correctly solve a linear system using substitution or elimination.

SLO 6: Students will be able to correctly identify a dependent or inconsistent system.

SLO 7: Students will be able to solve contextual problems involving linear systems, and correctly interpret their results.

Course goal 6: Scientific Notation

SLO 1: Students will successfully convert numbers from decimal to scientific notation and vice versa.

SLO 2: Students will successfully perform algebra on numbers written in scientific notation.

SLO 3: Students will be able to solve contextual problems involving scientific notation, and correctly interpret their results.

Course goal 7: Geometry and Trigonometry

SLO 1: Students will correctly compute perimeter, circumference, and area of various geometric figures including rectangles, circles, and triangles.

SLO2: Students will correctly solve contextual problems involving geometric figures and interpret their results.

SLO3: Students will correctly apply the Pythagorean Theorem to solve right triangle problems, both in and out of context.

SLO4: Students will correctly apply trigonometric ratios to right triangles to solve for desired information.

SLO5: Students will correctly apply the Law of Sines to solve for information in a triangle without a right angle.

SLO6: Students will correctly apply the Law of Cosines to solve for information in a triangle without a right angle.

SLO 7: Students will be able to solve contextual problems involving triangles, and correctly interpret their results.

**Note:** The instructor for this class reserves the right to change the syllabus at any point during the semester.

Week of	MATH 1170 Topics	Written Homework
Jan 16	1.5 Order of Operations 2.1 Working with Fractions	pg 56 A18,A24,A36 & pg 57 B2,B8 pg 84 A8,B9,C4 & pg 85D12, pg 86 F11
Jan 23	2.2 Multiplication of Fractions 2.3 Division of Fractions	pg 90 A10,A18,B4 & pg 91 C6,C16 pg 97 A8 & pg 98 A16,A24,C8,C14
Jan 30	2.4 Addition and Subtraction of Fractions 2.4 Part 2	pg 113 A8,A24,A28,A36 & pg 114 B12 pg 114 C4,C6 & pg 115 C12,C15,C20
Feb 6	3.1 Addition and Subtraction of Decimals 3.2 Multiplication and Division of Decimals	pg 138 B38 & pg 139 C2,C8 & pg 140 C12,C14 pg 156 A12 & pg 157 B6,F2 & pg 158 F12 & pg 159 F24
Feb 13	4.4 Percent Problems 4.4 Part 2	pg 235 A6,A16,A20,B8,B10 pg 236 C2,C8,C12 & pg 237 C18,C24
Feb 20	5.2 U.S. Customary Units and Conversions 5.3 Metric Units	pg 308 A2,A10,A14,A20 & pg 311 C16 pg 324 C2,C12 & pg 325 C28,D2,D4
Feb 27	5.4 Metric – U.S. Conversions 7.3 Solving Simple Equations	pg 335 A2,A6,A14,A32 & pg 336 B7 pg 457 A4,A10,A12,A20 & pg 458 B2
Mar 6	Review <b>Midterm Exam Friday March 10, 3-5pm</b>	
Mar 13	Spring Break	
Mar 20	7.4 Solving Two-Operation Equations 7.5 Solving More Equations and Formulas	pg 468 A4,A10 & pg 469 A28,B2,B6 pg 480 A10 & pg 481 A26,B5,C2 & pg 482 C8
Mar 27	7.8 Scientific Notation 8.2 Perimeter and Area of Quadrilaterals	pg 510 A10,A12,B12,B14 & pg 511 C3 pg 557 A10 & pg 558 B8, C2,C15,C16
Apr 3	8.3 Triangles 8.4 Circles	pg 581 A8,A22 & pg 582 B8 & pg 583 C1,C6 pg 594 B2 & pg 595 C8,D2,D6 & pg 596 D18
Apr 10	10.1 Angles and Right Triangles 10.2 Trig Ratios	pg 678 B18,B24 & pg 679 C6 & pg 682 D15,D19 pg 690 A2,A4,A6 & pg 691 B2,B6
Apr 17	10.3 Solving Right Triangles 10.3 Part 2	pg 699 A2 & pg 700 C4,C6 & pg 701 D2,D4 pg 702 D10 & pg 703 D19,D20 & pg 704 D24,D26
April 24	10.4 Oblique Triangles 10.4 Part 2	pg 714 A2,A4 & pg 715 A8,A12,A16 pg 715 B1,B2,B3,B4 & pg 716 B6
May 1	11.1 Systems of Equations 11.1 Part 2 Review	pg 747 A2,A4,A8,B2 & pg 748 B9 pg 748 C6,C10,C11,C13 & pg 749 C15
May 8	<b>Final Exam Monday May 8, 3-5pm</b>	