



## Math 1170: Technical Mathematics

Spring 2021 Section 501 CRN 51291

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Online Office Hours via Zoom Mon & Wed 1:30 pm – 2:30 pm

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3 Credit Hours

**Course Prerequisite:** In order for you to enroll in this course you need to have passed Math 100 or Math 022 with a C or better, or have tested into the course. If you have not met the prerequisite, you will be dropped from the course.

### COURSE DESCRIPTION

This course is designed for students in a technical trade, Allied Health, or Tech Prep program. There is an expectation for minimal background in mathematics (meet high school graduation requirements). For some of you, several topics may be “easy,” for others, these same topics may present a challenge, especially if it has been some time since you have done mathematical calculations and solved problems algebraically. We will begin with basic arithmetic operations on real numbers (whole numbers, fractions, decimals). We will delve into measurement in both the American Standard and International (metric) systems. We will do some algebra and work with geometric formulas. There are also sections on trigonometry and statistics. All of this will give you an overview of the types of mathematics you will likely use in technical and health fields.

### Student Learning Outcomes/Course Objectives

You will find a complete list of the course learning objectives at the end of this syllabus. I will also let you know in each unit which learning objectives are met.

### TECHNICAL SKILLS

To participate and succeed in this class, you will need to be able to perform the following basic technical tasks:

- Use UNM Learn (help documentation located in the "How to Use Learn" link on the left course menu, and also at [Online Student Documentation<sup>1</sup>](#)). Also, UNM-Valencia provides a Blackboard Learn Jumpstart self-learning module to give you practice with the most commonly used tools in UNM Learn. Ask your instructor if you do not see the UNM-Valencia Blackboard Learn Jumpstart in your list of classes in UNM Learn.
- Use email – including attaching files, opening files, downloading attachments
- Copy and paste within applications including Microsoft Office
- Open a hyperlink (click on a hyperlink to access a website or online resource)
- Use Microsoft Office applications
  - Create, download, update, save and upload MS Word documents
  - Download, annotate, save and upload PDF files
- Use the in-course web conferencing tool (Collaborate Web Conferencing software in UNM Learn) or use Zoom or another web conferencing tool
- Download and install an application or plugin – required for participating in web conferencing sessions

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<sup>1</sup> <http://online.unm.edu/help/learn/students/>

## TECHNICAL REQUIREMENTS

### Computer

- A high-speed Internet connection is highly recommended.
- Supported browsers include Chrome, Firefox, or Safari. Preferred operating systems are Windows or Apple.
- Any computer capable of running a recently updated web browser should be sufficient to access your online course. However, bear in mind that processor speed, amount of RAM, and Internet connection speed can *greatly* affect performance. ***Be aware, 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<sup>2</sup>](#))
- Please update your contact information in LoboWeb: [MyUNM Login<sup>3</sup>](#). 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 Spring semester from the [UNM-Valencia Library<sup>4</sup>](#). Contact the librarians for more information.

### Web Conferencing

Web conferencing will be used in this course for office hours and scheduled individual meetings you will need:

- A high-speed internet connection is highly recommended for these sessions. A wireless Internet connection may be used if successfully tested for audio quality before web conferencing.
- You should also dress as you would when attending an in-person meeting, even if you do not turn on your video camera
- (Recommended) A USB headset with a microphone. Headsets are widely available at stores that sell electronics, at the UNM Bookstore or online.

### 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

## TEXTBOOK AND SUPPLEMENTAL MATERIALS

### Required Textbooks:

**You do not need to actively purchase any textbook or online access for this class. It is web-enhanced for Inclusive access, meaning everything will already be in Blackboard learn.**

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<sup>2</sup> <http://it.unm.edu/software/index.html>

<sup>3</sup> <http://my.unm.edu/home>

<sup>4</sup> <http://valencia.unm.edu/library/index.html>

There will be a pathway in Learn using:

Title	Author	Publisher	ISBN	Duration
Mathematics for the Trades	Hal Saunders	Pearson Higher Education	9780134765778	LIFETIME
MyLab Math with Pearson eText -- 18 Week Standalone Access Card -- for Mathematics for the Trades	Robert A. Carman	Pearson PPC	9780135902028	126 days

**It will be available the first day of class in Learn.**

- Students should not use credit cards, debit cards, PayPal, or any method other than their Bursar accounts to pay for IA.
- Students may arrange to pay early by writing to [inclusiveaccess@unm.edu](mailto:inclusiveaccess@unm.edu).
- Student Bursar accounts will be billed after the add/drop date of February 5th, 2021, 11:59PM MST (Note that 3rd Party students, Dual Credit students, and students on athletic scholarship will have their IA charged to the responsible party, rather than the student's Bursar account.)
- NOTE: Inclusive Access is NOT paid through a course fee. It is billed after the add/drop deadline to your Bursar account.
- Students must check their email of record with the registrar's office during the first month of class for a welcome message and for an opt out reminder. This is usually their @unm.edu email, but if they are working or taking course for a North Campus department, it may be an @salud.unm.edu email. Note that failure to open their welcome and reminder emails does not exempt students from adhering to the rules of the IA program.
- Please note: Students who have a salud.unm.edu email in addition to a non-salud email must check their salud.unm.edu email for inclusive access messages! This is because the Registrar's office defaults students with two email addresses to the salud.unm.edu address as the email address of record, and often automatically switches it back to salud even if the student tries to change it.
- The emails sent to students will originate from [donotreply@redshelf.com](mailto:donotreply@redshelf.com), but they will look like they come from the UNM Bookstore. This is normal, and they should read these emails.
- The Bookstore can see the date on which they last opened these emails. Not opening an email does not exempt a student from the opt out deadline.
- Low cost print upgrades are available for most courses at the main UNM Bookstore at Cornell and Central NE for all classes except BIOM, or shop online at this link: <https://bookstore.unm.edu/coursebuilder.aspx>.
- Help can be found here: [https://bookstore.unm.edu/t-1unm\\_inclusiveaccess.aspx](https://bookstore.unm.edu/t-1unm_inclusiveaccess.aspx) and <https://solve.redshelf.com/hc/en-us>

**In addition, you should purchase the following tools:**

- Ruler (with both American Standard and Metric units)
- Protractor
- Grid or graph paper
- Paper, pencil, and eraser

This is an online course, so Internet access is required. Also, it will help if you have access to some sort of video camera. The one on your phone, if you have one, will be adequate. Most communications for this course, and activities and projects will be posted in Learn. You should check in Learn at least twice a week. There will also be assignments posted in MyMathLab. Be aware of deadline dates, Coursework and Participation

### **Instructor Response Time**

I routinely check the course for postings or emails, Monday (8 am) – Friday (noon), 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.

### **Procedures for Completing Coursework**

- Weekly assignments must be completed not later than the due date for full credit. You must notify your instructor if you wish to work on an assignment that is past due. A 30% penalty may be incurred for late pending on circumstances.
- All written work needs to be submitted online. If you have difficulty using a tool to complete work, notify your instructor immediately and/or use the “Create a Tech Support Ticket” link in the Course Menu.
- Tests/exams will be administered online

### **Expectations for Participation**

- Plan to spend a minimum of 9 to 12 hours per week for this class. There is no guarantee you will pass if you dedicate this amount of time, you still need to learn the material and use your time wisely, but those who pass generally are the ones who spend the time needed to do the work to learn the material.
- students are expected to learn how to navigate in Learn
- students are expected to learn how to navigate in MML Pearson
- students are expected to utilize Zoom
- students are expected to keep abreast of course announcements
- students are expected to use their UNM email as opposed to a personal email address and are expected to check their UNM email regularly
- students are expected to keep the instructor informed of class-related problems or problems that may prevent the student from full participation
- students are expected to address technical problems immediately

### **students are expected to always observe course netiquette**

#### **Netiquette**

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 the tone of voice; therefore, misunderstandings are more likely.

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

- Honor everyone’s right to an opinion.
- Respect the right of each person to disagree with others.

- 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.
- Respect your privacy and the privacy of others by not revealing information which you deem private and which you feel might embarrass you or others
- 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 becoming “ugly.” 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.

### **Here are the reasons you may be dropped from the class:**

- If you miss the first week of the semester – If you do not log into UNM Learn or communicate with the instructor.
- If you show minimal progress during the first three weeks of the semester. Minimal progress can be defined as
- If you are not completing assignments by the end of the second week.
- If you fall behind on deadlines by more than two weeks.

Do not depend on me to drop you if you decide not to take the class. You are responsible for withdrawing if you decide not to complete the course.

**You will be dropped if you do not complete, sign, and turn in the course contract found in the Start Here Module by the due date.**

### **How to complete your work for this class:**

Below is how you will progress through the material:

#### **MyMathLab (MML) Homework: (20% of your course grade)**

Online Computational assignments are assigned nearly every week based on the course outline. Weekly assignments in MyMathLab (MML) must be completed not later than the indicated date in MML.

#### **Participation/Activities: (15% of your course grade)**

Since this is an online class, you do not have the luxury of seeing your classmates in person, or me for that matter, during the week.

- Discussion postings are in Learn and provide a way for you to interact with your classmates. Each posting will have information about the number of points it is worth, and a rubric explaining the point distribution. If you do not post to the discussion forums by the indicated due dates, you will not receive credit for that posting. Point values on these will

vary, so see what it says for that posting.

- Activities will also be posted in Learn and provide extra practice on topics that are often difficult for students. It is important for me to see how you approach the problem so I can give you feedback, so be sure to show your work on these activities. I will take the activities up to one week after the due date, but if an activity is late, your final score will be docked points.
- There will be 3 one-on-one zoom meetings with your instructor this semester. This is a way for me to check in with you. You will be informed when it is time to schedule a one-on-one meeting via email. Each meeting will be worth 15 points each.

Your Activities, Discussions and Meetings score will be a weighted average of all of the activities, discussions, and meetings you complete out of the total possible.

### **Quizzes in MyMathLab: (20% of your course grade)**

- There is a quiz or test for each unit posted in MyMathLab. For the Unit 0 Pretest, you will receive 10 points for completing it on time no matter what your score is.
- For all other quizzes you will receive the final score on that quiz as shown in MyMathLab. You must score at least a 60% on the corresponding computational assignment before the quiz will open.
- The deadlines for quizzes are fixed. You cannot work past deadline on these unless you request an extension. I will allow you up to 4 extensions on quizzes during the semester. This is extensions for up to 4 quizzes. I will not automatically give these extensions just because you missed a quiz deadline, you will need to request the extension. Also, periodically I will review your quizzes, and if I disagree with the score MyMathLab gave you, I will adjust your score.
- Your Quiz score will be the average of all of the quizzes you completed out of the total possible.

### **Projects: (15 % of your course grade)**

You will have 3 projects to complete in this course. Descriptions of what you will need to do to complete these projects will be posted in Learn. Each project will be worth 100 points.

### **Midterm Exam: (10% of your course grade)**

Your midterm exam will occur at about the half-way point in the course. Use this exam as a trial run for your final exam – i.e. prepare for it in the same way you would prepare for your final. The exam will be online in MML Pearson and in UNM Learn.

### **Final Exam: (20% of your course grade)**

The final is a departmental exam that will test you overall, or nearly all, of the learning objectives for this course. You will be given a formula sheet for the final and you can use a calculator. The exam will be online in MML Pearson and in UNM Learn. You are allowed to take the final **only once**.

## NOTES TO STUDENTS ABOUT PARTICIPATION IN A COURSE USING UNM LEARN:

### Tracking Course Activity

UNM Learn automatically records all students' activities including your first and last access to the course, the pages you have accessed, the number of discussion messages you have read and sent, web conferencing, discussion text, and posted discussion topics. This data can be accessed by the instructor to evaluate class participation and to identify students having difficulty

### COURSE AVERAGES:

• MML Homework Assignments	20%
• Participation/Activities	15%
• MML Quizzes	20%
• Projects (3)	15%
• Midterm Exam	10%
• Cumulative Final Exam*	20%
<b>Total</b>	<b>100%</b>

Check Learn regularly for postings or changes of assignments and due dates.

Depending on the grading option you have chosen, your final course grade will be determined as follows:

- You will receive an A in the course if you have a weighted average of 90% or better.
- You will receive a B in the course if you have a weighted average of 80% to 89%.
- You will receive a C in the course if you have a weighted average of 70% to 79%.
- You will receive a D in the course if you have a weighted average of 50% to 69%.
- You will receive an F in the course if you have a weighted average less than 50%.

Or

- you will receive a CR in the course if you have a weighted average of at least 70%.
- You will receive an NC in the course if you have a weighted average less than 70%.
- I do not usually give a "+" grade unless you are on the borderline between two letters in which case, I may give the C+ for example instead of the B-. I give the D+ instead of the C- because a C- is not a passing grade.

You must earn a C (70%) or better to pass this course.

## UNM POLICIES

### Equal Opportunity and Non-Discrimination

To meet obligations under Title IX, UNM faculty, Teaching Assistants, and Graduate Assistants are considered "responsible employees" by the [Department of Education](#)<sup>5</sup> (see pg. 15). This designation requires that any report of gender discrimination which includes sexual harassment,

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<sup>5</sup> <https://www2.ed.gov/about/offices/list/ocr/docs/qa-201404-title-ix.pdf>

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](#)<sup>6</sup>.  
[Read more about UNM policy regarding sexual misconduct](#)<sup>7</sup>.

### **Copyright Issues**

All materials in this course fall under copyright laws and should not be downloaded, distributed, or used by students for any purpose outside this course.

[The UNM Copyright Guide](#)<sup>8</sup> has additional helpful information on this topic.

### **Accessibility and Accommodations**

The American with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodations of their disabilities. If you have a disability requiring an accommodation, please contact:

- [UNM-Valencia Student Services](#)<sup>9</sup> if you are a Valencia campus student. The phone number is 505-925-8560
- [UNM Accessibility Resource Center](#)<sup>10</sup> in 2021 Mesa Vista Hall if you are a main campus student. The phone number is 505-277-3506.

Information about your disability is confidential and your instructor cannot refer you for accommodations. Be aware that you will need to provide documentation. If you need assistance in obtaining documentation, the offices above can assist you.

### **Accessibility Statements**

[Blackboard's Accessibility statement](#)<sup>11</sup>

[Microsoft's Accessibility statement](#)<sup>12</sup>

*Include links to accessibility statements for all other technologies included in the course.*

### **Academic Integrity**

You should be familiar with UNM's [Policy on Academic Dishonesty](#)<sup>13</sup> and the [Student Code of Conduct](#)<sup>14</sup> which outlines academic misconduct defined as plagiarism, cheating, fabrication, or facilitating any such act.

*UNM Policies: This course falls under all UNM policies for the last day to drop courses, etc. Please see or the UNM Course Catalog for information on UNM services and policies. Please see the UNM academic calendar for course dates, the last day to drop courses without penalty, and for financial disenroll dates.*

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<sup>6</sup> <http://oeo.unm.edu/>

<sup>7</sup> <https://policy.unm.edu/university-policies/2000/2740.html>

<sup>8</sup> <https://copyright.unm.edu/>

<sup>9</sup> <http://valencia.unm.edu/students/student-services.html>

<sup>10</sup> <https://arc.unm.edu/>

<sup>11</sup> <https://www.blackboard.com/blackboard-accessibility-commitment>

<sup>12</sup> <https://www.microsoft.com/en-us/accessibility/>

<sup>13</sup> <https://pathfinder.unm.edu/campus-policies/academic-dishonesty.html>

<sup>14</sup> <https://pathfinder.unm.edu/code-of-conduct.html>



## UNM RESOURCES

- [UNM Valencia Campus Tutoring Services](#)<sup>15</sup>
- [UNM Main Campus CAPS Tutoring Services](#)<sup>16</sup>
- [UNM-Valencia Library](#)<sup>17</sup>
- [UNM Libraries](#)<sup>18</sup>
- [“Life” Resources available to UNM-Valencia Students](#)<sup>19</sup>
- [Student Health & Counseling \(SHAC\) Online Services](#)<sup>20</sup>

## 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 the main campus at 505-277-3181, or by email at [vrcc@unm.edu](mailto:vrcc@unm.edu). The Veterans Coordinator at UNM-Valencia is in the Student Services Office, at 505-925-8560.

## SEMESTER DEADLINES

### Spring 2021 – 16-week classes (deadlines will be different for first and second 8-week classes)

- Monday, January 18: First day of class, classes available in Blackboard Learn
- Friday, January 29, by 5:00 pm: Last day to add a class or change credit hours or grade mode in LoboWEB.
- Friday, February 5: Last day to drop without “W” grade and with 100% refund on LoboWEB
- Monday, January 18: Martin Luther King Jr. Day, no classes.
- March 14-21: SPRING BREAK
- Friday, April 16: Last day to drop *without* Dean’s permission on LoboWEB. Will receive a “W” grade and will be responsible for tuition for the course.
- Friday, May 7: Last day to add sections or change credit hours with form, last day to drop *with* Dean’s permission. Will receive a “W” grade and will be responsible for tuition for the course.
- May 5-15: Finals week. All final exams are given remotely.

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<sup>15</sup> <http://valencia.unm.edu/campus-resources/the-learning-center/learning-center.html>

<sup>16</sup> <http://caps.unm.edu/services/online-tutoring/olc.php>

<sup>17</sup> <http://valencia.unm.edu/library/index.html>

<sup>18</sup> <https://library.unm.edu/>

<sup>19</sup> <http://valencia.unm.edu/students/student-resources.html>

<sup>20</sup> <https://shac.unm.edu/>

## **Student Learning Outcomes for Math 1170**

Addresses UNM core area 2/HED Area II: Mathematics (Liberal Arts Math Competencies)

Upon completion of this course, students will demonstrate competence (70% or better) in the following areas:

### **Course Goal #1: Communication**

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

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

SLO 3: Students will explain (orally and/or in writing) the steps needed to solve a problem.

SLO 4: 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 common fractions.

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

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

SLO 4: Students will correctly evaluate exponents and radicals.

SLO 5: Students will correctly perform calculations and solve problems in which some values are percents.

SLO 6: Students will correctly convert between common fraction, decimal fraction, and percent notation.

SLO 7: Students will correctly use the Order of Operations.

SLO 8: Students will correctly solve proportional equations.

### **Course Goal #3: Measurement**

SLO 1: Students will correctly use tools to find accurate measurements in both the American Customary and Metric measurement systems.

SLO 2: Students will correctly convert between units within and between both the American Customary and Metric measurement systems.

SLO 3: Students will correctly interpret significant digits from recorded measurements.

### **Course Goal #4: Basic Algebra**

SLO 1: Students will correctly solve for a variable in linear and quadratic equations.

SLO 2: Students will correctly solve for the indicated variable in a formula.

SLO 3: Students will correctly add, subtract, multiply, and simplify algebraic expressions.

SLO 4: Students will correctly convert contextual statements (word problems) into algebraic expressions and equations.

SLO 5: Students will correctly complete calculations with scientific notation.

### **Course Goal #5: Plane Geometry and Solid Figures (2-D and 3-D)**

SLO 1: Students will correctly compute perimeter, circumference, area, volume, and surface area of 2-D and 3-D geometric figures.

SLO 2: Students will correctly measure various attributes of 2-D and 3-D geometric figures.

SLO 3: Students will correctly solve contextual problems involving 2-D and 3-D geometric figures.

**Course Goal #6: Triangle Trigonometry**

SLO 1: Students will correctly use the Pythagorean Theorem to solve problems as applied to right triangles.

SLO 2: Students will correctly use basic trigonometric ratios to solve problems as applied to right triangles.

SLO 3: Students will correctly use the Law of Sines and/or the Law of Cosines to solve problems as applied to oblique triangles.

**Course Goal #7: Statistics**

SLO 1: Students will correctly read and construct graphs from data.

SLO 2: Students will correctly calculate measures of central tendency.