Math 1240: Precalculus

In-person: M/W, 1:30pm-2:45pm
Arts and Sciences Building, Rm 140
MECS Division Chair: Ariel Ramirez, aramirez8@unm.edu

Please note: This syllabus is subject to change, if needed.

Office and Contact Information:

Office: A-123B (though I'll typically be in the STEM Tutoring Center in the LRC)

Email: ataylor19@unm.edu (this is the absolute best way to get in touch with me, quickly!)

Student Hours (Instructor-Led Help Sessions):

o **Mondays & Wednesdays:**
  12:15 pm-1:30 pm in STEM Tutoring Center (Learning Resource Center, near PASOS)

o **Tuesdays & Thursdays:**
  12:15 pm -1:30 pm in Zoom! We'll meet in the Zoom room indicated, below:
  https://unm.zoom.us/j/98190874379 (Opened by email request, no passcode, authenticated UNM Zoom account required)

o **OR BY APPOINTMENT!**

UNM Course Description:

Welcome to Math 1240! Here is the UNM course description:

This course extends students' knowledge of polynomial, rational, exponential and logarithmic functions to new contexts, including rates of change, limits, systems of equations, conic sections, and sequences and series. May be taken concurrently with 1230.
(I) Meets New Mexico General Education Curriculum Area 2: Mathematics and Statistics
(ii) Prerequisite: 1220 or ACT Math =>25 or SAT Math Section =>590 or ACCUPLACER Next-Generation Advanced Algebra and Functions =249-283.

Student Learning Outcomes (SLOs):

By the end of the course, students will be able to:

Communication:

1. Use correct mathematical notation and terminology.

2. Read and interpret graphs.

3. Evaluate functions and difference quotients for a variety of functions.

Graphing and Knowledge of Functions and their Applications:

4. Graph some basic functions; includes power, root, reciprocal, and piecewise defined functions.

5. Calculate an average rate of change of a function and to interpret its meaning.

6. Shift and reflect graphs; compress and stretch graphs horizontally and vertically.

7. Identify one-to-one functions and find and graph their inverses

8. Find extreme values of quadratic functions.

9. Set up models using functions in word problems.

10. Compose functions and to express a given functions as a composition of two simpler functions.

Polynomial and Rational Functions: Attributes and Graphs:

11. Determine the end behavior and the zeros of polynomial functions. They will be able to use this to graph the function.

12. Divide polynomials and to understand the Division Algorithm. Students will be able to solve quadratic equations with complex roots.

13. Find horizontal, vertical, and skew asymptotes of rational functions. They will be able to graph rational functions.

Exponential and Logarithmic Functions: Attributes, Applications and Graphs:

14. Graph exponential and logarithmic functions.

15. Solve a variety of exponential and logarithmic equations.

16. Set up exponential growth and decay models and to solve the associated word problems.

Analytic Geometry:

17. Identify and graph the conic sections.

Technical Requirements:

- A Laptop/tablet/personal computer (if you don't have one, laptops are available to rent for free in the UNM Valencia Library: http://valencia.unm.edu/library/index.html), and there are computers available for use throughout the LRC on UNM Valencia Campus.
- High-Speed Internet Connection (highly recommended)

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 smart phones or tablets.

Microsoft Office products are available free for all UNM students!
UNM IT Software Distribution and Downloads page: http://it.unm.edu/software/index.html

Please update your contact information in LoboWeb: http://my.unm.edu/home
When you log into MyUNM, Enter LoboWeb. Click on the Personal Information link to make sure your contact information is up to date.

Web Conferencing
Web conferencing may be used in this course if needed for office hour appointments. If you are utilizing web conferencing:

- A USB headset with microphone is recommended. Headsets are widely available at stores that sell electronics, at the UNM Bookstore or online.

- A high-speed internet connection is highly recommended for these sessions.   A wireless Internet connection may be used if successfully tested for audio quality prior to web conferencing.
 - You should also dress as you would when attending an in-person class, even if you do not turn on your video camera (mistakes happen -- please be properly clothed).
 - To create a UNM supported Zoom account, visit https://unm.zoom.us

Class Text and Program:

The text (or eText) for this course is:

- **Pre-calculus Mathematics for Calculus, 8th Edition, Stewart, Redlin, Watson**
- **Cengage's WebAssign access will be required in order to complete homework assignments.** There will be some suggested problems to practice for written homework, in addition to the online work.

Note: WebAssign is a paid access program. Click on the "RedShelf Course Materials" tab in Canvas to access WebAssign for the semester. This will charge your Bursar's account for the e-book + WebAssign access.

Attendance Policy:

Attendance is **highly** recommended, but there is no direct attendance grade. I do understand that sometimes life circumstances can prevent students from performing with perfect consistency every week. ***That being said, staying active in the class every week, spreading your studying and class effort throughout the week, is one of the best ways to help ensure your success in passing***. Being present, participating, and staying on top of the material are great contributors to success.

Submitting Assignments/Exams (VERY IMPORTANT – READ CAREFULLY):

You must submit all written assignments and assessments by the due date. All assignments/assessments and work therein should be neat, legible, appropriately organized, and include detailed and well-justified work. ***Any work that is illegible, or that lacks proper substance/explanation/justification will not receive credit. Please make sure to show ALL your work so that partial credit can be awarded for simple mistakes.*** Remember, you can use <u>words</u> to explain your thinking alongside your mathematics. Conveying your thought process to me is the most important element in your written work; if you understand the process and the idea, and mess up on arithmetic somewhere, you will earn the vast majority of the credit for a given problem. However, if you just have an answer (which is the result of an arithmetic error), and you haven't explained your thought process, I have nothing to award credit for without evidence of your understanding.

Written Assignments/Projects:

All written projects must be submitted in the appropriate Canvas dropbox**, in the correct format (PDF of the original document)**, on time in order to be accepted. If the file link is broken or doesn't otherwise open properly on my end, it will be considered missing and receive a 0 grade. Please prevent this by double checking your submission before you walk away and make SURE it is what you want to submit. You will have two attempts if you accidentally mess up one submission (both submissions must still be before the due date). Only a late pass can allow for late submission of a project.

In order to convert your file to a PDF, you have a couple easy options:
1) Use a traditional printer/scanner (some available on UNM Valencia/UNM Main Campus) in order to create the PDF of your work, download to your computer/storage device, and upload the file in the appropriate dropbox.
2) Download the free `Adobe Scan' app for your smartphone, create a PDF using your phone's camera in the app, send a copy to your email, download the file on your computer/storage device, and upload the file in the Canvas dropbox.

The following methods will <u>NOT</u> be accepted:
1) Copying and pasting an image of your work into a Microsoft Word document, saving as a PDF, then submitting this file. This method often makes your work VERY difficult to read and looks very unprofessional in the submission.
2) Submitting your assignment to my email because the dropbox didn't accept a non-PDF document.

Late Passes:

You have 3 late passes for the semester. Using a late pass grants you up to 5 additional days to submit an assignment. You may use them on **any homework or project, but NOT assessments such as quizzes and exams.** In order to use a late pass for a homework assignment, you must let me know *in advance* of the due date by submitting a request via WebAssign. You can request an extension for a project via email. You do not need to present me with a doctor's note, or provide any reason for using a late pass (it doesn't matter whether you're sick or going to a concert – that's up to you). However, I'd highly recommend saving them until you really **need** them. Once you've used your passes, that's all you get. If you have incredibly emergent circumstances (long-term stay in hospital, etc.), just let me know, and I will examine those circumstances on a case-by-case basis. In those cases, if approved, you may be asked to provide evidence of that circumstance.

Submitting Exams: (VERY IMPORTANT: Please read carefully!)

We will have two **in-person, handwritten** exams at UNM Valencia campus, this semester, detailed in the `Course Structure' section of the syllabus.

During these exams, you will **NOT** have access to the following: calculator, phone/tablet/computer/other device capable of perusing the internet, notes/textbook. You may occasionally be provided a formula, if deemed necessary, and you will be able to bring in a notecard, front and back, that you've created during your studying process. Otherwise, all you need is a pencil or two, and your knowledge of the material.

If you must miss an exam due to a family/medical (i.e. absolutely cannot take it on the day scheduled in the syllabus), it is your responsibility to let me know at least one week in advance (preferably two weeks in advance), so that you have adequate time to set an appointment to make it up *before* the assessment, during my office hours, or with a proctor at UNM-VC or the UNM Testing Center.

Communication with Instructor:

The absolute MOST RELIABLE way to communicate with me as quickly as possible is to **send me an email**. If you ask a question via the homework platform, or via Canvas messages, I won't see it as quickly as if you send me an email. I routinely check for student emails, Monday through Friday, at various times throughout the morning, afternoon and evening, as well as occasionally on weekends. Expect a response no later than 24-48 hours. If I haven't responded within 48 hours, please resend your email, as it may have (accidentally) been overlooked!

Expectations for Students:

Please note that in order to be successful in this course, and in mathematics courses in general, you will need to spend a fair amount of time each week working on this course.

Here are my recommendations for the **minimum** amount of time you should be spending in this course, each week.

WebAssign Homework: 4-6 hours/week
Student Hours: 30 min to 1 hour per week.
General Studying: 1-3 hours/week outside of homework and office hours. Can include looking over notes from class, looking over notes posted in Canvas, practicing additional written problems.
I'd highly recommend taking notes over things that stand out to you in class: examples, impactful things that are said that make sense to you, or interesting questions posed by students and discussed in class. There will be a fair amount of discussion of problems from the text, and I will post power point slides from the publisher for some notes on definitions, with some examples.

Course Structure:

This course will consist of the following graded components:

Homework (30%):
(WebAssign Homework Assignments)
- You'll have ~2 assignments per week.
 - Your lowest 2 homework scores will be dropped.
 - Late homework can only be accepted with the "3 late pass policy."

Recommended practice problems (not due for a grade, just for study) are posted on final page.

Projects (10%):
You'll have 2 projects this semester, each worth 5% of your grade.

Quizzes (10%):
Expect 5-6 in-class quizzes throughout the semester, typically taken at the beginning of class on the day scheduled.

Midterm Exam (25%):
The midterm exam will be given on **Wednesday, October 9, 2024** during class time, in our classroom.

Final Exam (25%):

The comprehensive final exam will be given in class **on Wednesday, December 11, 2024 from 1:30pm-3:30pm** in our classroom.

*For written assessment submissions such as exams/projects, you should typically expect your grades within one week. Assignments through WebAssign should offer immediate grading upon submission. *

BONUS Opportunity!

There may be bonus points available on select assignments/assessments.

You can earn up to 5 bonus points on each of your midterm/final exams (1 point per visit) by either:

1) Visiting my Instructor-Led Help Sessions and working with me for at least 1 hour
2) Visiting a tutoring center and working with a tutor for at least 1 hour

You can claim these points by creating a tutoring reflection for each visit and sending the cumulative summary of your visits to me. Your reflection summary should include the following (all visit reflections in one document):

Visit 1: Date:_____, Time In-Time Out:_____, Tutoring Center: _____, Specific material I studied:_____, Something I learned (at least one full sentence): _____, Something I still need to practice:_____, Tutor/Prof. Signature: _____, Student Signature: _____

Visit 2: Date_____, Time:_____, Tutoring Center:_____, Specific material I studied:_____, Something I learned (at least one full sentence): _____, Something I still need to practice:_____, Tutor/Prof. Signature: _____, Student Signature: _____

…etc.

If you complete 5 visits and reflections between August 19, 2024 and October 8, 2024, and submit them to me by October 08, 2024 you will earn 5 bonus points on your midterm exam.

If you complete 5 visits and reflections between October 14, 2024 and December 10, 2024, and submit them to me by December 10, 2024 you will earn 5 bonus points on your final exam.

Grading Policy:

Cumulative Average at End-of-Course	Final Grade in Class
$96.5 \leq Avg \leq 100+$	A+
$93 \leq Avg < 96.5$	A
$89.5 \leq Avg < 93$	A-
$86.5 \leq Avg < 89.5$	B+
$83 \leq Avg < 86.5$	B
$79.5 \leq Avg < 83$	B-
$76.5 \leq Avg < 79.5$	C+
$69.5 \leq Avg < 76.5$	C
$66.5 \leq Avg < 69.5$	D+
$63.5 \leq Avg < 66.5$	D
$59.5 \leq Avg < 63.5$	D-
$Avg < 59.5$	F

Important Semester Deadlines:

Fall 2024: 16-week classes (deadlines will be different for first and second 8-week classes)

• Monday, August 19: First day of class, class available in Canvas.
• Friday, August 30, by 5:00 PM: Last day to add a class or to change credit hours or grade mode in LoboWEB.
• Friday, September 6, 5:00 PM: Last day to drop without "W" grade and with 100% refund on LoboWEB
• Thursday, October 10- Friday, October 11: FALL BREAK: No class!
• Friday, November 8, by 5:00 PM: Last day to drop without Dean's permission on LoboWEB. Will receive "W" grade and will be responsible for tuition for the course.
• Thursday, December 5, by 5:00 PM: Last day to drop with Dean's permission. Will receive "W" grade and will be responsible for tuition for the course.
• December 9 - December 13: Final Exams Week

UNM Valencia Resources & Support:

Support:

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.

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 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 in student hours, or at my email, and contact 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 mailto:arcsrvs@unm.edu (505) 277-3506.

Tutoring:
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](#).

At UNM Main Campus, you may contact: [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").

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.

Connecting to Campus and Finding Support: UNM has many resources and centers to help you thrive, including [opportunities to get involved](#), [mental health resources](#), [academic support including tutoring](#), [resource centers](#) for people like you, free food at [Valencia Campus Food Pantry](#), and [jobs on campus](#). Your [advisor](#), staff at the [resource centers](#) and [Academic Affairs Office](#), and I can help you find the right opportunities for you.

UNM Statements & Policies:

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.

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: http://undocumented.unm.edu/.

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 at [ ]; 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.

Credit-hour statement:
This is a three credit-hour course. Class meets for two 75-minute sessions of direct instruction for fifteen weeks during the Fall 2023 semester.

Title IX:
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" 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 and reporting, please 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).

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.

Recommended Textbook Practice Problems by Section

In addition to the Cengage, if you'd like extra practice, complete some/all of the odd numbered problems.

2.1 Functions 11,17-25 all, 27, 29, 31-41 all,47-61

2.2 Graphs of Functions 17,19,25,35-41,49,53,56,61,63

2.3 Information from Graphs 5,7,9,11,15,31,33,43-45

2.4 Average Rate of Change 5,7,11,13-20 all,23-31

2.6 Transformations of Functions 5-13,23-29,33,39-43,55-65,75,83,95

2.7 Combining Functions 11-15,16,27-31,35-41,45,49,51,61-65,67

2.8 One-to-One, Inverse Functions 13,15,21,31-35,43,45,49-57,61,63,85,95

3.1 Quadratic Functions/Models 15-33,39-43,49,51-65

3.2 Polynomial Functions/Graphs 5-9,13,18,25,27,28,29,33-39,43,51

3.3 Dividing Polynomials 3-19,47-67, (replace synthetic div. by long div.)

3.4 Real Zeros of Polynomials 5-10, 11-14, 23, 25, 27, 35-43, 47-53, 63, 65, 67, 105

3.5 Complex Zeros and the Fundamental Theorem of Algebra 19-31, 37-43, 51-63, 65, 69

3.6 Rational Functions 9,11,13,19,23,25,29,31-37,43,49,54,58,69-73

1.8 Inequalities 51,55-65,73-85

10.8 Systems of Nonlinear Equations 3,9,15,17,21,23,27,31,45

4.1 Exponential Functions 21-30 all, 31-41,44

4.2 Natural Exponential Function 9-15,24,25(a-c),33-37

4.3 Logarithmic Functions 9-19,27,29,33,53,55,63-77

4.4 Laws of Logarithms 15-19,32,39,45,53,61

4.5 Exp. /Log. Equations 15,21,35,39,45,61,65,67,89-97

4.6 Modeling with Exponential Func's. 3-27

13.1 Limits: Numerically/Graphically 5-9, 17-19, 29,31

13.2 Limits: Algebraically 5-30 all,33,43,35,37,39,41,43

13.4 Limits at Infinity 5-15,19-21 (table only) 23-27,31,33

13.3 Tangent Lines and Derivatives 11-17, 21,23,25,39,41,43,45

11.2 Ellipses 5-13,23-27,33,39,51-55

11.3 Hyperbolas 3-7,11,15,17,23,25,37-39