MATH-2413 CALCULUS I

The University of Texas at Tyler, Spring 2026

Time and Place:
Section 03: MoWeFr 10:30AM - 11:45AM. Ratliff Building North (RBN) 04025
Section 04: MoWeFr 1:25PM - 2:40PM. Ratliff Building North (RBN) 04025

Instructor: Pamela Delgado, Ph.D

Office: RBN 4009

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Office Hours: MoWeFr: 3 pm to 4 pm, Room RBN 4009.
Office hours can also be arranged at a different time if the times above do not work for you. Please email me 2 business days in advance so we can find a common time to meet.

Overview: A study of functions, limits, continuity, differentiation of algebraic and trigonometric functions, applications of the derivative, definite and indefinite integrals with applications. The goal is to prepare you to make use of calculus as a practical problem-solving tool.

Prerequisites: Satisfy any of the following:

- C or better in MATH 2312 (or equivalent);
- C or better in MATH 1316 (or equivalent);
- Satisfactory score on ACT, SAT, THEA, or departmental trigonometry test.

Textbook: The text for this course is Calculus Volume 1, by OpenStax. This is an open source textbook. The online edition is available at http://www.openstax.org/details/books/calculus-volume-1/. Print copies can be purchased at a reasonable cost from their website.

Grading procedure:
Three exams 60% (each worth 20%)
Quizzes 15%
Final exam 20% (comprehensive)
Project 5%

Grading scale:
A: Greater or equal to 90%, **B:** greater or equal to 80%, strictly less than 90%,
C: greater or equal to 70%, strictly less than 80%, **D:** greater or equal to 60%, strictly less than 70%,
F: strictly less than 60%.

Final exam date:
Section 03: Monday, April 27 10:15AM - 12:15AM. Ratliff Building North (RBN) 04025
Section 04: Monday, April 27 12:30PM - 2:30PM. Ratliff Building North (RBN) 04025

Important Dates:

- January 26th. Census date: Last date to withdraw without incurring grades of "W" or "Q".
- March 30th. Last day to withdraw from one or more courses with a W.

For more important dates visit: http:///www.uttyler.edu/academics/academic-calendar-25-26/academic-calendar-15-week-and-summer.php

Evaluations: We will have three exams and a comprehensive final exam. The exam dates are listed in the schedule below. We will also have weekly quizzes. **Quizzes are given at the beginning of lecture**. Arrive on time so you can use the full time allocated for the quiz. The lowest quiz will be dropped.

Attendance: Students are expected to attend every lecture and to arrive on time. If a lecture is missed, it is the student's responsibility to catch up on the material covered and to find out about any announcements made during class.

Make-up evaluations: Make-up evaluations for exams and quizzes are **only given if you have a legitimate justification; documentation to support your justification must be provided.** Make-up evaluations must be completed within three days of your return to your academic duties. It is the responsibility of the student to communicate with me promptly and regularly until arrangements for the missed evaluation have been established. If this criterion is not met, the make-up evaluation won't be granted.
Legitimate justifications for make-up evaluations include illness (affecting you or your child), pregnancy related absences, or academic conflict that will prevent you from being in class. If you know you will be missing classes, you need to contact me as soon as you become aware of the lecture you will miss. **In case of illness as justification for a missed evaluation, you will need to present a doctor's note dated within 72 hours of the missed lecture.** You can also go to the Health Clinic on campus, to make an appointment call (903) 939-7870. Pregnant and parenting students must work with the Parenting Student Liaison to satisfy the requirement of documentation supporting your justification. You can reach out to Parenting Student Liaison at parents@uttyler.edu. Approval for make-up evaluations due to personal reasons will be granted only in exceptional circumstances for substantial grounds, and documentation will still be required. Early flights home, bus tickets to leave town, and family vacations are NOT valid excuses to miss or reschedule a final exam.

Grade Revision Requests for Evaluations: If you believe there is an error in the grading of an exam, quiz, or other in-class evaluation, you must submit a request for a grade review within three (3) business days of the evaluation being returned to you. Requests made after this deadline will not be considered. You must also present the original evaluation in good condition (not torn, altered, defaced, or missing pages). I reserve the right to refuse review requests if the evaluation has been damaged or modified in a way that prevents fair re-grading. A grading scale/rubric is always applied, so grade revision requests must be based on a specific grading issue (e.g., points not added correctly, a correct step was overlooked, or your work matches the rubric) and not on a general belief that your grade "should be higher".
On quizzes and exams, incorrect work may be penalized, even if you later arrive at a correct final answer. This is especially important if you present more than one solution/approach for the same problem: if multiple solutions are shown, I will grade what is written, and contradictory or incorrect reasoning can reduce your score. To avoid this, present only the solution you intend to be graded, and clearly cross out any abandoned work.

Project (Pedagogical Visualization): Throughout the term, you will have several opportunities to choose a project topic and complete it within a specified time window. The project is worth 5% of your final course grade. The goal of the project is to create pedagogical visualizations of course topics designed to help explain

ideas clearly to others, using different formats (e.g., a short write-up, poster, infographic, video, or interactive visualization). Projects may be completed individually or in groups of up to three (3) students. Additional details, including topic options, deadlines, and grading criteria, will be provided during the semester.

Student Learning Outcomes: Upon completion of this course, students should be able to do the following:

- Discuss solutions to the tangent and area problems involving calculus concepts of limits, derivatives, and integrals.
- Use graphs of algebraic and transcendental functions to determine limits, continuity, and differentiability at a point.
- Determine whether a function is continuous and/or differentiable at a point using limits.
- Apply differentiation rules to differentiate algebraic and transcendental functions.
- Choose appropriate calculus concepts and techniques to provide mathematical models of real-world situations and determine solutions to applied problems.
- Compute definite integrals using the Fundamental Theorem of Calculus.
- Recognize and discuss the relationship between derivatives and integrals using the Fundamental Theorem of Calculus.

Preparing for quizzes and exams: To prepare for quizzes and exams you must have **plenty** of practice. I will provide lists of exercises for the different topics covered in class. These exercises will not be collected for grading; they are a tool to help you practice and reinforce your understanding of the material. The lists of exercises will be posted on Canvas. Exams will have similar exercises to those from these lists, making it crucial that you understand how to solve them. As time permits, we will dedicate some lecture time to solving these exercises. I strongly encourage you to actively participate in these exercise-solving lectures. For any exercises we cannot cover together in class due to time constraints, you should ensure you solve them on your own, and seek help from me during office hours if needed. You are encouraged to collaborate with your classmates, and you may use any resources you prefer to solve the exercises, but keep in mind that **for evaluations you must show all your work for full credit, and you are only permitted to use results and techniques that were covered in class**. Moreover, struggling with an exercise is a vital part of the learning process. It challenges you to think deeply and helps solidify your understanding. Don't skip this important step in your mathematical development by immediately searching for solutions elsewhere. Make sure to give each exercise a serious attempt on your own first; only then will discussing the exercise with your classmates or looking at others' solutions add real value to your exam/quiz preparation. I will also provide study guides for the different evaluations, they will be posted on Canvas as well. Study guides are not exhaustive; they are intended to serve as a resource to help you review and focus your studying. You are still responsible for all material covered in class, even if it does not appear explicitly on the guide.

Artificial Intelligence Statement:

From the University Policies and Information:
"UT Tyler is committed to exploring and using artificial intelligence (AI) tools as appropriate for the discipline and task undertaken. We encourage discussing AI tools' ethical, societal, philosophical, and disciplinary implications. All uses of AI should be acknowledged as this aligns with our commitment to honor and integrity, as noted in UT Tyler's Honor Code. Faculty and students must not use protected information, data, or copyrighted materials when using any AI tool. Additionally, users should be aware that AI tools rely on

predictive models to generate content that ***may appear correct but is sometimes shown to be incomplete, inaccurate****, taken without attribution from other sources, and/or biased. Consequently, an AI tool should not be considered a substitute for traditional approaches to research. You are ultimately responsible for the quality and content of the information you submit. Misusing AI tools that violate the guidelines specified for this course (see below) is considered a breach of academic integrity. The student will be subject to disciplinary actions as outlined in UT Tyler's Academic Integrity Policy."*

For Math-2413:
As stated above, you may use any resources to solve the exercises assigned in class. For this course, **the use of AI tools is permitted only outside of lecture; however, if you choose to use them, you do so at your own risk**, given that you might obtain incorrect answers or answers based on results not studied in class. Even when the answers are correct and consistent with our lectures, relying solely on these tools **defeats the purpose of the assigned exercises as a learning tool**. Assigned exercises are designed to help you understand and apply the material, which is essential for your success in this course. If you merely copy answers from AI without fully engaging with the problems, **you may find yourself unprepared for in-class evaluations, where NO electronic devices —and therefore no AI tools— will be allowed**. Ultimately, this approach could negatively impact your performance on evaluations and your overall understanding of the subject.

Calculators: The use of **calculators** and other electronic devices, including **cell phones**, during exams or quizzes is strictly **prohibited**, so study accordingly.

Academic Integrity: All students have the responsibility to exhibit honesty and to respect the ethical standards of academic conduct in carrying out his or her academic assignments. Academic dishonesty will be dealt with seriously.

Student Resources: As stated above, **for evaluations you must show all your work for full credit, and you are only permitted to use results and techniques that were covered in class**. Keep this in mind when you use any of the following resourses:

- **The Mathematics Learning Center (MLC)**, RBN 4021, is an open access computer lab for math students. There are tutors on duty for several hours each day to assist students who are enrolled in early-career courses. For more information about the MLC including the tutoring schedule visit: https://www.uttyler.edu/academics/colleges-schools/arts-sciences/departments/mathematics/math-learning-center.
- **The UT Tyler PASS Tutoring Center** PASS Tutoring offers face to face and online tutoring for select undergraduate courses. You do not need an appointment to see a tutor in person; however, you will need an appointment to work with a tutor online. For assistance scheduling an online appointment, please reach out to tutoring@uttyler.edu. For more information including the tutoring schedule visit: https://www.uttyler.edu/academics/success-services/tutoring/ for the PASS tutoring schedule.
- **Upswing** (Online Tutoring Service) Online tutoring for undergraduate UT Tyler courses is available 24 hours per day, 7 days per week. Through Upswing, an online tutoring platform, students can connect with professional tutors without having to be present on campus. Upswing services are free to currently enrolled, undergraduate UT Tyler students. For more information about Upswing visit https://www.uttyler.edu/academics/success-services/tutoring/

University Policies: See https://www.uttyler.edu/offices/academic-affairs/files/syllabus-information.pdf for important information on University policies and resources including Student Accessibility and Resources, student rights and responsibilities, Withdrawing from Class, Incomplete Grade and Grade Appeal Policy, Military Affiliated Students, Students on an F-1 Visa, Academic Honesty and Academic Misconduct, FERPA,

Absences Policy, and campus carry.

UT Tyler is proud to be a tobacco-free campus.

Schedule: The following is a TENTATIVE schedule for lectures and is subject to change.

Date	Section and Topic	Notes	Date	Section and Topic	Notes
Mo 01/12	Course Intro / Ch1 Fun		We 03/11	No classes	Spring Break
We 01/14	Ch1 Fun and Graphs		Fr 03/13	No classes	Spring Break
Fr 01/16	Ch1 Fun and Graphs		Mo 03/16	4.7 Appl Optim Prob	
Mo 01/19	**No Class**	**M.L.K Jr. Day**	We 03/18	4.8 L'Hopital's Rule	
We 01/21	2.2 Lim of Fun		Fr 03/20	4.9 Newton's Method	**Quiz 7**
Fr 01/23	2.3 Lim Laws	**Quiz 1**	Mo 03/23	4.10 Antiderivatives	
Mo 01/26	2.4 Continuity		We 03/25	5.1 Approx Areas	
We 01/28	4.6 Limits Inf and Asymp		Fr 03/27	5.2 The Def Integral	**Quiz 8**
Fr 01/30	3.1 Def Deriv	**Quiz 2**	Mo 03/30	5.3 The FTC	
Mo 02/02	3.2 Deriv as Fun		We 04/01	5.4 Integ Form	
We 02/04	3.3 Diff Rules		Fr 04/03	5.5 Substitution	**Quiz 9**
Fr 02/06	3.4 Deriv as Rates	**Quiz 3**	Mo 04/06	5.6 Int Exp and Log	
Mo 02/09	**Midterm 1**		We 04/08	5.7 Int inverse trig	
We 02/11	3.5 Deriv Trig fun		Fr 04/10	**Midterm 3**	
Fr 02/13	3.6 Chain Rule	**Quiz 4**	Mo 04/13	6.1 Areas btw curves	
Mo 02/16	3.7 Deriv Inv Fun		We 04/15	6.7 Integ Exp/Log fun	
We 02/18	3.8 Impl Diff		Fr 04/17	6.8 Exp growth/decay	**Quiz 10**
Fr 02/20	3.9 Deriv Exp-Log Fun	**Quiz 5**	Mo 04/20	Review	
Mo 02/23	4.1 Rel Rates		We 04/22	Review	
We 02/25	4.2 Lin Approx & Diff		Fr 04/24	Review	**Quiz 11**
Fr 02/27	4.3 Max & Min	**Quiz 6**	Mo 04/27	**Final Exam**	Comprehensive
Mo 03/02	4.4 Mean Value Theorem				
We 03/04	4.5 Derv Shape of a Graph				
Fr 03/06	**Midterm 2**				
Mo 03/09	No classes	Spring Break			

A message from your instructor:
To make the most out of the learning journey we are about to embark on, it is important we create an environment in our class that is safe and supportive for everyone to participate and share their input, regardless of race, gender, class, sexual orientation, etc. Both you and I have a duty to treat everyone with respect and courtesy, and you can expect the same treatment for yourself. This will allow for a space in which our individualities enrich the learning process.

The instructor reserves the right to change this syllabus, with due notice to the class, to best benefit the needs of the students.