

# MATH 2414 Calculus II

The University of Texas at Tyler, Spring 2026

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**Instructor:** Dr. Ivan Ramirez-Zuniga

**Email:** iramirezzuniga@uttyler.edu

**Office:** RBN 4005

**Website:** All materials will be posted on Canvas

## Time and Place:

- Section 003: MoWeFr 10:30 am - 11:45 am at RBN 4024.

**Office Hours:** MWF 9-10 am, or request an appointment by email (at least two days in advance).

**Preferred method of communication:** My preferred method of communication is by email. Please start your emails with a greeting, followed by your full name, course and section.

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**Textbook:** There is no required textbook for this class, as most of the material will be provided by your instructor. However, I will follow Essential Calculus: Early Transcendentals (2nd Edition) by James Stewart as a guide. Most calculus textbooks cover the same content in a similar order, so you are welcome to use any calculus resource you prefer. Additionally, you can find free online resources including the open access text for Calculus Volume 2, by OpenStax. The online edition is free and available at <http://www.openstax.org/details/books/calculus-volume-2/>. Print copies can be purchased at a reasonable cost from their website.

**Course description:** A study of differentiation and integration of transcendental functions, polar coordinates, techniques of integration, sequences, series and improper integrals. The goal is to prepare you to make use of calculus as a practical problem-solving tool.

**Course prerequisites:** Satisfy any of the following:

- C or better in MATH 2413 (or equivalent);

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

- Apply integration to solve problems involving area, volume, and physical work.
- Apply substitution, integration by parts, trigonometric substitution, partial fractions to evaluate definite and indefinite integrals.
- Apply the concepts of limit, convergence and divergence to evaluate some classes of improper integrals.
- Define sequences and series, and determine convergence or divergence.
- Find the Taylor and MacLaurin series to represent elementary functions.
- Apply the ideas of polar coordinates to find areas, lengths of curves and representations of conic sections.

## Grading procedure:

- Three midterm exams 60% (20% each).
- Final exam (cumulative) 20%
- Quizzes 15%
- Homework 5%

**Grading scale:** A:90-100%, B: 80-89%, C: 70-79%, D: 60–69%, F:<60%.

**Midterm Exams:** Exams will cover all material presented in class up to two lectures before the scheduled exam date. For example, if an exam is scheduled on a Friday, the material included will extend through the lecture on the preceding Monday. **A practice set will be provided in Canvas as a guide to help you prepare; however, this set is not intended to be exhaustive.** In addition to the practice problems, material from homework assignments and any topics covered in class during that period may appear on the exam.

**Quizzes:** There will be weekly **quizzes every Friday at the end of class** (as shown in the tentative schedule below) unless otherwise announced by your professor in the previous lecture. They will generally last for twenty minutes. **Your lowest two quizzes will be dropped** at the end of the semester. Make-up quizzes will not be offered if the student fails to notify the professor before the scheduled quiz is missed. If you know that you will have to miss a quiz for a legitimate reason (medical emergency, athletic commitment, religious observance, etc.), you must notify the professor in advance to schedule a make-up quiz before the following class. Absolutely no make-up quizzes will be given after the class following a scheduled quiz. Missed quizzes that are not made up before the following class will earn a grade of zero. **Quizzes will assess material covered during the previous week and may also include content introduced on the Monday of the quiz week. Any material discussed in class during that period may appear on the quiz. A set of practice problems will be assigned for each quiz to aid in preparation; however, these problems should not be considered exhaustive.**

**Note:** If you have any questions or concerns about a quiz, exam, or any posted grade, **you must contact me within one week of the date the graded assessment is returned (or the grade is posted in Canvas)**, regardless of whether you were present in class that day. After one week, the grade will stand as recorded and no further changes will be made. It is your responsibility to check your grades in Canvas regularly to ensure there are no mistakes.

**Homework:** The homework in this course is a **learning tool**. Its primary purpose is to give you the opportunity to practice important methods and **to learn**. Very few students can master this material without plenty of practice. If you look up solutions online without first giving yourself the chance to think and struggle with each question, you may earn the homework points, but you will miss out on the opportunity to truly learn and understand the topics covered in the homework. Please **feel free to come ask me questions about homework** and other course material during office hours or to contact me to schedule alternative appointments. **Your questions are always welcome.**

Homework will be **assigned via the online platform WeBWorK**. Additional information on logging into and using WeBWorK will be available on Canvas. A new homework assignment will become available on WeBWorK after each class. It is your responsibility to be aware of the due date, which will be posted in Canvas and on WeBWorK. The WeBWorK system provides you with instant feedback on your answers, as well as a number of attempts to complete most problems. You are required to successfully complete

all assigned problems on WeBWorK. **Late homework will NOT be accepted and there will be no extensions or additional attempts.** If you are having issues with a particular problem, make sure to visit my office hours before you exhaust all your attempts.

**Make-up policy:** Make-ups for documented absences that are required as part of a UT Tyler obligation (e.g. athletes participating in an event, students participating in a debate contest, etc.) or for religious observation will be granted. **For all make-ups of this type, prior notification of at least one week and documentation are required. Other make-ups are granted only in extreme cases and at the sole discretion of the instructor. Valid documentation, such as a medical note from a health professional (dated within 72 hours of the missed evaluation) must be provided to be eligible for the make-up evaluation.** Consider visiting the Health Clinic on Campus for such a request. To make an appointment call (903) 939-7870. It is the responsibility of the student to communicate with me promptly and regularly until arrangements for the missed work have been established. If this criterion is not met, make-up evaluation won't be granted. Leaving early for a break, having a family trip, etc are NOT grounds for a make-up, so please make your travel plans accordingly. In almost all cases, missed quizzes will be assigned a 0. **Keep in mind that the 2 lowest quizzes will be dropped at the end of the semester.**

**Attendance:** Attendance is **mandatory**. You are expected to attend class on time and prepared. Students are responsible for all announcements made during lecture. **During class, you are expected to remain engaged and should not work on unrelated activities** (e.g., texting, browsing the internet, watching videos, or using a phone/laptop for non-course purposes).

#### **Student Resources:**

- **Canvas 101:** To learn how to use Canvas visit: <https://www.uttyler.edu/canvas/>
- **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>.
- **Supplemental Instruction program.** The Supplemental Instruction (SI) Program is a peer-led study group, which provides academic support to students in traditionally difficult courses to help them become successful. SI sessions are facilitated by Supplemental Instruction Leaders (SILs), peer students, who have previously completed the targeted course and have demonstrated competency in the course. In sessions, students are introduced to various study skills and strategies in addition to course content practice, which enable them to become successful in all their college courses. Sessions are offered regularly each week in person to ensure maximum engagement. During the typical session, students will have the opportunity to clarify/compare their notes with their classmates, review all required reading assignments, and discuss key course concepts. Though it is important to grasp key functions of the SI Program, it is equally important to understand that SI is not a remedial program. SI is a free and voluntary program that is open to all students, which eliminates the stigma that only certain students should come to sessions. SI strives to maintain a non-remedial, non-threatening, and non-punitive image. For more information visit: <https://www.uttyler.edu/academics/success-services/supplemental-instruction/>.
- **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](mailto: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/online/>

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

**Cellphones and electronic devices:** Cellphones are not permitted during class. At all times, cellphones must be silenced and put away. **During evaluations (quizzes and exams), earbuds, headphones, smartwatches, and any other electronic accessories/devices are not allowed** and must be removed and put away before the assessment begins.

**Artificial Intelligence Statement:** 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 this course, **the use of AI tools is permitted for homework assignments only, but it is important to understand that you do so at your own risk.** While AI may provide correct answers, relying solely on these tools can **defeat the purpose of homework as a learning tool.** Homework is 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, including AI tools, will be allowed.** Ultimately, this approach could negatively impact your performance on exams and your overall understanding of the subject.

**UT Tyler a Tobacco-Free University:** All forms of tobacco will not be permitted on the UT Tyler main campus, branch campuses, and any property owned by UT Tyler. This applies to all members of the University community, including students, faculty, staff, University affiliates, contractors, and visitors. Forms of tobacco not permitted include cigarettes, cigars, pipes, water pipes (hookah), electronic cigarettes (vaping), smokeless tobacco, snuff, chewing tobacco, and all other tobacco products. There are several cessation programs available to students looking to quit smoking, including counseling, quitlines, and group support. For more information on cessation programs please visit <https://www.uttyler.edu/offices/human-resources/wellness/tobacco-cessation/>.

**Academic Integrity:** Your work must be your own. Violations will be processed according to the established guidelines of the department, college, and university. Violations of academic integrity include, but are not limited to, cheating, fabrication, or plagiarizing. A range of academic sanctions may be taken against a student who engages in academic dishonesty.

**Accessibility:** The Department of Mathematics at UT Tyler offers accommodations to students with

learning, physical, and/or psychological disabilities. If you have a disability for which you are or may be requesting an accommodation, you are encouraged to contact both your instructor and the Student Accessibility and Resources (SAR) as early as possible in the term. SAR will verify your disability and determine reasonable accommodations for this course. You can find more information in their website <https://www.uttyler.edu/academics/success-services/disability-services/>.

Take into account that once an application and supporting documentation is received, the SAR registration process may take 5-7 business days to complete. It is the student's responsibility to apply for and obtain accommodations in a reasonable time frame within the semester. No accommodation reviews will be completed during the final three weeks of the current semester unless the condition is temporary or newly diagnosed.

**Policies:** See <https://www.uttyler.edu/offices/academic-affairs/files/syllabus-information.pdf> for these and other important University policies including: UT Tyler Honor code, student rights and responsibilities, campus carry, UT Tyler a tobacco-free university, grade replacement and forgiveness, state-mandated course drop policy, student accessibility and resources, student absence for university-sponsored events, social security and FERPA, emergency exits and evacuation, and student standards of academic conduct.

**Important Dates:** To find these and other important dates visit the University academic calendar at: <https://www.uttyler.edu/academics/academic-calendar-25-26/>.

- January 26th. Census date: Date to withdraw without penalty, grade replacement deadline.
- March 30th. Last day to withdraw from one or more courses with a W.
- Final Exam. Monday April 27th.

**Schedule:** The following is an approximate lecture schedule, including dates for midterms and quizzes. This schedule is subject to change if necessary.

Date	Section and Topic	Notes	Date	Section and Topic	Notes
Mo 01/12	Course Intro/ Usub		Mo 03/09	<b>No Class</b>	<b>Spring Break</b>
We 01/14	Int by parts		We 03/11	<b>No Class</b>	<b>Spring Break</b>
Fr 01/16	Int by parts		Fr 03/13	<b>No Class</b>	<b>Spring Break</b>
Mo 01/19	<b>No Class</b>	<b>MLK Day</b>	Mo 03/16	Series	
We 01/21	Trig Int and Sub		We 03/18	<b>Midterm 2</b>	
Fr 01/23	Trig Int and Sub	Quiz 1	Fr 03/20	Series	
Mo 01/26	Part Frac		Mo 03/23	Int and comp test	
We 01/28	Part Frac		We 03/25	Int and comp test	
Fr 01/30	Approx Int	Quiz 2	Fr 03/27	Other conv tests	Quiz 7
Mo 02/02	Imp Int		Mo 03/30	Power series	
We 02/04	Imp Int		We 04/01	Repr fun as Power series	
Fr 02/06	Areas bwt curves	Quiz 3	Fr 04/03	Taylor and Maclaurin	Quiz 8
Mo 02/09	Volumes		Mo 04/06	Appl of Taylor poly	
We 02/11	<b>Midterm 1</b>		We 04/08	Param curves	
Fr 02/13	Volumes		Fr 04/10	<b>Midterm 3</b>	
Mo 02/16	Vol by Cylind Shells		Mo 04/13	Calculus with param curves	
We 02/18	Arc length		We 04/15	Polar coordinates	
Fr 02/20	Area surf rev	Quiz 4	Fr 04/17	Areas lengths polar coord	Quiz 9
Mo 02/23	App Phy/Eng		Mo 04/20	Conic Sections polar coord	
We 02/25	App Phy/Eng		We 04/22	Review	
Fr 02/27	Diff equations	Quiz 5	Fr 04/24	Review	
Mo 03/02	Diff equations		Mo 04/27	<b>Final Exam</b>	
We 03/04	Sequences				
Fr 03/06	Sequences	Quiz 6			