MATH 1426-300

Calculus I

Fall 2019

Instructor Information

Instructor(s):
Tyler Anway

Office Number:
PKH 424

Email Address:
tyler.anway@uta.edu

Faculty Profile:
https://mentis.uta.edu/public/#profile/profile/edit/id/25351/category/1

Office Hours:
We from 3-4pm and 5:30-6:30pm **or by appointment**.

Course Information

Section Information:
MATH 1426-300

Time and Place of Class Meetings:
Lecture: MoWe in COBA 256 from 4-5:20pm
Labs: 301 MoWe in PKH 309 from 3-3:50pm
302 MoWe in PKH 305 from 5:30-6:20pm

Description of Course Content:
Concepts of limits, continuity, differentiation and integration; applications of these concepts. Prerequisite: A qualifying score on the Math Placement Test (MPT) is required to register for this course, or student group.

Student Learning Outcomes: Upon completion of Math 1426, the students will be able to perform various tasks including (but not limited to) those outlined below with algebraic, trigonometric and transcendental functions.

1. Students will be able to compute the limit of various functions without the aid of a calculator.
2. Students will be able to compute the derivatives and differentials of various functions without the aid of a calculator, and interpret certain limits as derivatives. In particular, they will be able to compute derivatives and differentials using differentiation techniques such as chain rule, implicit differentiation and logarithmic differentiation.
3. Students will be able to find the equation of the tangent line to the graph of a function at a point by using the derivative of the function. They will be able to estimate the value of a function at a point using a tangent line near that point.
4. Students will be able to sketch the graphs of functions by finding and using first-order and second-order critical points, extrema, and inflection points.
5. Students will be able to solve word problems involving the rate of change of a quantity or of related quantities. Students will be able to solve optimization problems in the context of real-life situations by using differentiation and critical points of functions. The problem topics include (but are not limited to) population dynamics, finance, physics, biology, chemistry and sociology.
6. Students will compute the area below the graph of a function by using a limit of a Riemann sum and/or by using a definite integral.

7. Students will be able to compute certain antiderivatives using various antidifferentiation techniques such as integration by substitution. They will be able to apply the Fundamental Theorems of Calculus to compute derivatives, antiderivatives, definite integrals and area.
8. Students will be able to justify and explain their steps in problem solving. In particular, students will be able to construct correct and detailed mathematical arguments to justify their claimed solutions to problems.

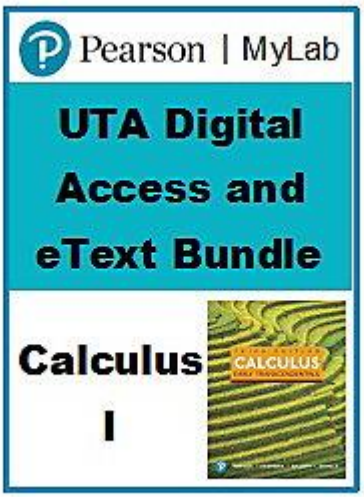
Required Textbooks and Other Course Materials:

This course is part of the UTA Mathematics Department Affordability Campaign, making state-of-the-art online mathematics resources available to our students at the lowest possible price when compared to purchasing elsewhere. To receive the discounted price, purchase course materials through the UTA Bookstore. Search by course or use this site: http://bit.ly/2tQ090S

E-text and Direct Access (Required): Your course materials include the e-version of the course text as well as MyLab course access which is designed to enrich student success by providing instant feedback on your assignments plus on-demand access to personalized study plans, a multimedia library, practice tests, and more. The e-texts may be downloaded for offline use. Every student has trial access to MyLab course materials as soon as the course is available in Canvas, so you can start working on your course even before you purchase the course materials! That said, students will need a verified purchase within the first two weeks of classes, otherwise, the access to your digital materials will freeze and your account will stay deactivated until the purchase is confirmed. During the purchasing process, please ensure you enter your name as shown on your UTA records along with your MAVS email address for proper processing.

1426 MATH DDA-CALCULUS 1 (0812) (Custom)…$87.50

Check the "Digital" box and purchase.



This bundle contains the required online MyLab Homework assignments and the e-text of the Briggs, Cochran, Gillett and Schulz, *Calculus: Early Transcendentals*, 3rd edition textbook.

Calculators: The ONLY calculators allowed for the midterms and final are TI-30XA, TI-30XS and TI-30XIIS.

For labs the same calculators are allowed.

Descriptions of major assignments and examinations:

Grade Components:

	Exam 1	20%
		Friday, September 20th, 2019 from 6:00 - 8:00 pm
	Exam 2	25%
		Friday, October 25th, 2019 from 6:00 - 8:00 pm
	Final Exam	35%
		Saturday, December 7th, 2019 from 12:30 - 3:00 pm
	Lab	20% (5% lab activities, 5% lab quizzes, 8% on-line HW, 2% Attendance)

Grading Scale:	90-100	A
	80-89	B
	70-79	C
	60-69	D
	0-59	F

Midterms and Finals: These exams are departmental, i.e., all sections of Math 1426 (except for section 271) will take the same exam and the grades will have the same weight in each section. All of these exams are comprehensive. Each exam will be a mix of multiple choice problems and show-your-work problems.

You may access recent previous midterms and some of the finals online. Go to
https://mavspace.uta.edu/xythoswfs/webview/_xy-697804_1.
Solutions to the multiple choice questions are available at
https://mavspace.uta.edu/xythoswfs/webui/_xy-1083634_1-t_jbpAg0IM.

HW: HW will be assigned and completed by students on-line.

No make-ups on HW and Labs, except in extreme circumstances (hospitalization, e.g.)

Grading Information

Grading:

How the final grade will be calculated:
[Exam 1]*20% + [Exam 2]*25% + [Final Exam]*35% + [Lab Activities]*5% + [Lab Quizzes]*5% + [HW]*8% + [Lecture Participation]*2%.

Any student who scores below 50 on the final exam cannot receive a grade higher than D in the course.
Any student who does not take the Final Exam cannot receive a grade higher than F in the course.

Make-up Exams:

Make-up Policy: If you have a conflict with either midterm or final, you must contact your instructor no later than Census Date (Friday, September 6th) by using a form provided to you at your request by your instructor & submitting it together with necessary documentation as indicated on the form. If a conflict arises after September 6th, contact your instructor immediately. **Delays in submitting a make-up request may mean that your request cannot be approved by the course coordinator (Mark Krasij, PKH 450).**

Course Schedule

Course Schedule:
(Goal is to be done with the given sections in the textbook by the dates listed)

8/21 2.1 Idea of Limits
8/26 2.2 Definitions of Limits
8/28 2.3 Techniques for Computing Limits
9/4 2.4 Infinite Limits
9/4 2.5 Limits at Infinity
9/9 2.6 Continuity
9/9 3.1 Introduction to Derivatives
9/11 3.2 The Derivative as a Function
9/16 3.3 Rules of Differentiation

9/18 Review for Exam #1

[9/20 Exam #1]

9/23 3.4 Product and Quotient Rules
9/25 3.5 Derivatives of Trigonometric Functions
9/25 3.6 Derivatives as Rates of Change
9/30 3.7 Chain Rule
10/2 3.8 Implicit Differentiation
10/7 3.9 Derivatives of Logarithmic and Exponential Functions
10/7 3.10 Derivatives of Inverse Trigonometric Functions
10/9 3.11 Related Rates
10/14 4.1 Maxima and Minima
10/16 4.3 What Derivatives Tell Us
10/21 4.4 Graphing Functions
10/23 Review for Exam #2

[10/25 Exam #2]

10/28 4.4 Optimization Problems
10/30 4.5 Linear Approximation and Differentials
10/30 4.2 Mean Value Theorem
11/4 4.7 L'Hopital's Rule
11/6 4.9 Antiderivatives
11/11 5.1 Approximating Areas Under Curves
11/13 5.2 Definite Integrals
11/18 5.3 Fundamental Theorem of Calculus
11/20 5.4 Working with Integrals
11/20 5.5 Substitution Rule
11/25 6.1 Velocity and Net Change
11/25 6.2 Regions Between Curves
12/2 8.8 Numerical Integration
12/4 Review for Final Exam

[12/7 Final Exam]

"As the instructor for this course, I reserve the right to adjust this schedule in any way that serves the educational needs of the students enrolled in this course." –Tyler Anway.

Institution Information

Drop Policy

Students may drop or swap (adding and dropping a class concurrently) classes through self-service in MyMav from the beginning of the registration period through the late registration period. After the late registration period, students must see their academic advisor to drop a class or withdraw. Undeclared students must see an advisor in the University Advising Center. Drops can continue through a point two-thirds of the way through the term or session. It is the student's responsibility to officially withdraw if they do not plan to attend after registering. **Students will not be automatically dropped for non-attendance**. Repayment of certain types of financial aid administered through the University may be required as the result of dropping classes or withdrawing. For more information, contact the Office of Financial Aid and Scholarships.
Any student who drops this course on or before Friday, November 1st, 4 pm will receive a W.

Disability Accommodations

UT Arlington is on record as being committed to both the spirit and letter of all federal equal opportunity legislation, including *The Americans with Disabilities Act (ADA), The Americans with Disabilities Amendments Act (ADAAA),* and *Section 504 of the Rehabilitation Act.* All instructors at UT Arlington are required by law to provide "reasonable accommodations" to students with disabilities, so as not to discriminate on the basis of disability. Students are responsible for providing the instructor with official notification in the form of **a letter certified** by the Office for Students with Disabilities

(OSD). Only those students who have officially documented a need for an accommodation will have their request honored. Students experiencing a range of conditions (Physical, Learning, Chronic Health, Mental Health, and Sensory) that may cause diminished academic performance or other barriers to learning may seek services and/or accommodations by contacting: The Office for Students with Disabilities**, (OSD)** or calling 817-272-3364. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at the OSD website.

If you require an accommodation based on a disability please contact me during the first week of the semester, to make sure you are appropriately accommodated.

Non-Discrimination Policy

The University of Texas at Arlington does not discriminate on the basis of race, color, national origin, religion, age, gender, sexual orientation, disabilities, genetic information, and/or veteran status in its educational programs or activities it operates. For more information, visit Equal Opportunity Services.

Title IX Policy

The University of Texas at Arlington ("University") is committed to maintaining a learning and working environment that is free from discrimination based on sex in accordance with Title IX of the Higher Education Amendments of 1972 (Title IX), which prohibits discrimination on the basis of sex in educational programs or activities; Title VII of the Civil Rights Act of 1964 (Title VII), which prohibits sex discrimination in employment; and the Campus Sexual Violence Elimination Act (SaVE Act). Sexual misconduct is a form of sex discrimination and will not be tolerated. *For information regarding Title IX, visit* the Title IX website or contact Ms. Michelle Willbanks, Title IX Coordinator at (817) 272-4585 or titleix@uta.edu.

Academic Integrity

Students enrolled all UT Arlington courses are expected to adhere to the UT Arlington Honor Code:

I pledge, on my honor, to uphold UT Arlington's tradition of academic integrity, a tradition that values hard work and honest effort in the pursuit of academic excellence.
I promise that I will submit only work that I personally create or contribute to group collaborations, and I will appropriately reference any work from other sources. I will follow the highest standards of integrity and uphold the spirit of the Honor Code.
UT Arlington faculty members may employ the Honor Code in their courses by having students acknowledge the honor code as part of an examination or requiring students to incorporate the honor code into any work submitted. Per UT System *Regents' Rule* 50101, §2.2, suspected violations of university's standards for academic integrity (including the Honor Code) will be referred to the Office of Student Conduct. Violators will be disciplined in accordance with University policy, which may result in the student's suspension or expulsion from the University. Additional information is available at Student Conduct. Faculty are encouraged to discuss plagiarism and share the following library tutorials Copyright & Fair Use: Plagiarism and Acknowledging Sources.

Electronic Communication

UT Arlington has adopted MavMail as its official means to communicate with students about important deadlines and events, as well as to transact university-related business regarding financial aid, tuition, grades, graduation, etc. All students are assigned a MavMail account and are responsible for checking the inbox regularly. There is no additional charge to students for using this account, which remains active even after graduation. Information about activating and using MavMail is available at OIT: Student MavMail.

Campus Carry

Effective August 1, 2016, the Campus Carry law (Senate Bill 11) allows those licensed individuals to carry a concealed handgun in buildings on public university campuses, except in locations the University establishes as prohibited. Under the new law, openly carrying handguns is not allowed on college campuses. For more information, visit https://www.uta.edu/enews/email/2016/07-20-campus-carry.html

Final Review Week

Final Review Week for semester-long courses**,** a period of five class days prior to the first day of final examinations in the long sessions shall be designated as Final Review Week. The purpose of this week is to allow students sufficient time to prepare for final examinations. During this week, there shall be no scheduled activities such as required field trips or performances; and no instructor shall assign any themes, research problems or exercises of similar scope that have a completion date during or following this week *unless specified in the class syllabus*. During Final Review Week, an instructor shall not give any examinations constituting 10% or more of the final grade, except makeup tests and laboratory examinations. In addition, no instructor shall give any portion of the final examination during Final Review Week. During this week, classes are held as scheduled. In addition, instructors are not required to limit content to topics that have been previously covered; they may introduce new concepts as appropriate.

Student Feedback Survey

At the end of each term, students enrolled in face-to-face and online classes categorized as "lecture," "seminar," or "laboratory" are directed to complete an online Student Feedback Survey (SFS). Instructions on how to access the SFS for this course will be sent directly to each student through MavMail approximately 10 days before the end of the term. Each student's feedback via the SFS database is aggregated with that of other students enrolled in the course. Students' anonymity will be protected to the extent that the law allows. UT Arlington's effort to solicit, gather, tabulate, and publish student feedback is required by state law and aggregate results are posted online. Data from SFS is also used for faculty and program evaluations. For more information, visit Student Feedback Survey.

Active Shooter

The safety and security of our campus is the responsibility of everyone in our community. Each of us has an obligation to be prepared to appropriately respond to threats to our campus, such as an active aggressor. Please review the information provided by UTA Police regarding the options and strategies we can all use to stay safe during difficult situations. For more information, visit https://police.uta.edu/crime-prevention/active-shooter-resources.php.

Counseling and Psychological Services (CAPS)

CAPS is available to all students to help increase their understanding of personal issues, address mental and behavioral health problems and make positive changes in their lives. Visit Counseling and Psychological Services or call 817-272-3671.

Student Success Programs

UT Arlington provides a variety of resources and programs designed to help students develop academic skills, deal with personal situations, and better understand concepts and information related to their courses. Resources include tutoring by appointment, drop-in tutoring, https://www.etutoringonline.org/, supplemental instruction, mentoring (time management, study skills, etc.), success coaching, TRIO Student Support Services, and student success workshops. For additional information, please email resources@uta.edu or view the Maverick Resources website.

Additional Information

Attendance:

At The University of Texas at Arlington, taking attendance is not required but attendance is a critical indicator of student success. Each faculty member is free to develop his or her own methods of evaluating students' academic performance, which includes establishing course-specific policies on attendance. As the instructor of this section, section, I will take attendance during all lectures either electronically or using sign-in sheets, and students will receive no credit for lab period assignments (e.g. recitation quizzes and problem solving activities) if they are absent from them. A student will receive no credit for a lab session they do not attend. To further incentivize lecture attendance, the following incentives shall be offered to students: Any student who attends at least 90% of lectures will have their worst two quizzes and worst lab assignment score dropped at the end of the semester. Any student who attends at least 80% of lectures will have their worst two quizzes dropped at the end of the semester. Any

student who attends at least 70% of lectures will have their worst quiz dropped at the end of the semester.

However, while UT Arlington does not require instructors to take attendance in their courses, the U.S. Department of Education requires that the University have a mechanism in place to mark when Federal Student Aid recipients "begin attendance in a course." UT Arlington instructors will report when students begin attendance in a course as part of the final grading process. Specifically, when assigning a student a grade of F, faculty report must the last date a student attended their class based on evidence such as a test, participation in a class project or presentation, or an engagement online via Canvas. This date is reported to the Department of Education for federal financial aid recipients.

Emergency Exit Procedures:
Should we experience an emergency event that requires evacuation of the building, students should exit the room and move toward the nearest exit. When exiting the building during an emergency, do not take an elevator but use the stairwells instead. Faculty members and instructional staff will assist students in selecting the safest route for evacuation and will make arrangements to assist individuals with disabilities.

Students are encouraged to subscribe to the MavAlert system that will send information in case of an emergency to their cell phones or email accounts. Anyone can subscribe at Emergency Communication System.

Student Support Services:
UT Arlington provides a variety of resources and programs designed to help students develop academic skills, deal with personal situations, and better understand concepts and information related to their courses. Resources include tutoring by appointment, drop-in tutoring, mentoring (time management, study skills, etc.), major-based learning centers, counseling, and federally funded programs. For individualized referrals, students may call the Maverick Resource Hotline at 817-272-6107, send a message to resources@uta.edu, or view the information at Resource Hotline (http://www.uta.edu/studentsuccess/success-programs/programs/resource-hotline.php).

IDEAS Center:
The IDEAS Center (https://www.uta.edu/ideas/) **(**2nd Floor of Central Library) offers **FREE** tutoring and mentoring to all students with a focus on transfer students, sophomores, veterans and others undergoing a transition to UT Arlington. Students can drop in or check the schedule of available peer tutors at www.uta.edu/IDEAS, or call (817) 272-6593.

The Library's 2nd floor Academic Plaza (http://library.uta.edu/academic-plaza) offers students a central hub of support services, including IDEAS Center, University Advising Services, Transfer UTA and various college/school advising hours. Services are available during the library's hours of operation.

MATH CLINIC

The Math Department operates the **Math Clinic**, a tutoring service staffed by upper level undergraduate students. The Math Clinic is on the 3rd floor of Pickard Hall; the phone number is 817-272-5674; and the hours of operation for fall and spring are

Monday – Thursday	8 am – 9 pm
Friday	8 am – 12 pm
Saturday	1 – 6 pm
Sunday	1 – 7 pm

Go to the Math Clinic webpage https://www.uta.edu/math/LRC/clinic.php to get more information or to access assignment sheets for the courses for which tutoring is offered.

Emergency Phone Numbers

In case of an on-campus emergency, call the UT Arlington Police Department at **817-272-3003** (non-campus phone), **2-3003** (campus phone). You may also dial 911. Non-emergency number 817-272-3381

Important Dates:

Wednesday, August 21st	First day of class
Monday, September 2nd	Labor Day Holiday
Friday, September 6th	Census Date (**Deadline for makeup requests for <u>all</u> exams)**
Friday, September 20th	**Midterm Exam 1, 6:00 – 8:00 pm**
Friday, October 25th	**Midterm Exam 2, 6:00 – 8:00 pm**
Friday, November 1st	Last day to drop a class (by 4 pm)
Wednesday, November 27th	No classes scheduled
Thursday-Friday, November 28th-29th	Thanksgiving Holidays
Wednesday, December 4th	Last day of class
Saturday, December 7th	**Final Exam, 12:30 – 3:00 pm**