MATH 1710.700 CALCULUS I (Summer 2022)

Instructor Contact

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Office Location: GAB 468
Office Hours: 12:50 pm to 1:50 pm (Monday-Thursday)
Course Meets:MTWR 2pm-3:20pm
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Communication Expectations: Email, we can meet over zoom if required.

Course Description

4 hours. Limits and continuity, derivatives, and integrals; differentiation and integration of polynomial, rational, trigonometric, and algebraic functions; applications, including slope, velocity, extrema, area, volume, and work.

Required Text/Materials

The textbook is Stewart, James, *Calculus, 9th* Edition. It is available online through WebAssign platform.

Cengage WebAssign: WebAssign is online course delivery platform accessed directly through Canvas. WebAssign access includes all online homework assignments, the e-text of *Calculus 9th Edition*, by James Stewart, and additional learning resources. Use the link in Canvas to register immediately. You must register in WebAssign by the 2nd class day of the semester. See WebAssign Student Information.

WebAssign grants a no-cost temporary 14-day access. You must purchase your access before the temporary access expires. If you do not make the purchase before trial period ends, you may lose credit for all work previously completed. Again, see WebAssign Student Information for purchase information.

Grading

Homework (WebAssign) – 21%
Calculus I Review Assignment – 5% (2.1 Derivatives and Rates of Change
2.2 The Derivative as a Function)
Midterm Exams – 58%
Final Exam – 16%

- A: 90-100% (Outstanding, excellent work. The student performs well above the minimum criteria.)
- B: 80-89% (Good, impressive work. The student performs above the minimum criteria.)
- C: 70-79% (Solid, college-level work. The student meets the criteria of the assignment.)
- D: 60-69% (Below average work. The student fails to meet the minimum criteria.)
- F: 59 and below (Sub-par work. The student fails to complete the assignment.)

Late work will not be accepted in this course regardless of the reason.

Course Structure

This course will meet in person 4 times per week for lecture and one time per week for recitation. There will be regular homework, 2 midterm exams, one final and quizzes and/or activities during recitation.

Homework

Each week there will be homework on WebAssign for the sections covered that week. The homework will be due by 11:59 PM on Tuesday of the following week. For instance, in week 1 we will cover all of 1.4, 1.5, 1.6, and 1.7. Thus, the homework on these sections will need to be completed by Tuesday night during week 2. This is to give ample time and flexibility should the unexpected happen, but ideally you should be completing the homework as you go through the module during the week. To provide an incentive, you will receive a 5% bonus for any work on the homework completed more than 48 hrs before the deadline. Keep in mind you will have to check WebAssign frequently to keep up with the due dates, there will not be reminders in Canvas. On the homework you will generally have 10 attempts on each question with some possible exceptions (e.g. multiple choice or true false questions). Your lowest four (4) homework scores will be dropped.

Precalculus Review

During the three weeks of the semester, you will need to complete a somewhat lengthy review assignment in WebAssign. This assignment goes over the main topics from Precalculus to make sure you are prepared for this (and future classes). You will have 100 attempts on each question, so that you have ample opportunity to 2.1 Derivatives and Rates of Change 2.2 The Derivative as a Function review and get it right. This assignment is 5% of your grade.

Exams

There will be 2 midterm exams administered in person during lecture.

If you miss an exam, you receive a zero for that exam. There are no make-up exams. However, if the student has a university-excused absence (Links to an external site.)and provides documentation with 48 hours of the missed exam, then the zero will be replaced by the final exam grade (this includes missing an exam due to illness/covid-19). You may ask me to go over exam problems with you. However, all decisions on partial credit are final and not open for discussion.

Recitation

The recitation instructors for this course:

You will receive additional instruction by the TA in your recitation section. The TA will work additional examples (with student input) and answer homework questions or other questions related to the material. The TA will also administer short quizzes or activities on the material. The TA will not repeat full lectures on a topic.

Attendance

Attendance is important and required. In this class, this means looking alive in class and working through the examples in lecture and recitation as we go. It is assumed you will do this. The instructor will not repeat whole lectures or offer personal lessons in office hours or email. These venues are for specific questions / problems.

Course Prerequisites or Other Restrictions

- Officially, the prerequisite is a grade of C or higher in MATH 1650.

- A willingness to put in several hours of work each week to absorb each the material in each module. In math courses, especially this one, the content will build upon itself making it very difficult to catch up if you fall behind

Academic Dishonesty

Cheating will not be tolerated. Any student found cheating will receive no credit on the assignment and a report will be filed with the office of academic integrity.

Course Objectives

Upon successful completion of this course, learners will be able to:

- Develop solutions for tangent and area problems using the concepts of limits, derivatives, and integrals;

- Create graphs of functions considering limits, continuity, and differentiability at a point;

- Determine whether a function is continuous and/or differentiable at a point using limits;

- Use differentiation rules to differentiate functions;

- Identify appropriate calculus concepts and techniques to provide mathematical modules of real-world situations and determine solutions to applied problems;

- Evaluate definite integrals using the Fundamental Theorem of Calculus;

- Articulate the relations between derivatives and integrals using the Fundamental Theorem of Calculus;

- Determine the area between curves using integration techniques; and

- Determine the volume generated by rotating a curve about an axis.

Technical Requirements & Skills

Minimum Technology Requirements

- Access to a computer, tablet, or laptop that is compatible with all required apps for the course

- Access to reliable internet

- A scientific or basic graphing calculator (TI-84 or equivalent) is recommended

Technical Skills & Digital Literacy

- Navigate Canvas and WebAssign

- Scan documents and create pdf files (there are several free scanning apps for phones / tablets like Adobe Scan or Office Lens)

- Upload documents to Canvas

- Complete assignments on WebAssign

Schedule

I reserve the right to change this schedule as necessary throughout the semester. You are still responsible for being aware of any changes I announce in class even if you were not present.

MONDAYTUESDAY TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	
6/6 1.4 Tangent and Velocity Problems	6/7 1.5 The Limit of a Function	6/8 1.6 Calculating Using Limit Laws	6/9 1.7 The Precise Definition of a Limit	6/10 6/14

6/13	6/14	6/15	6/16	6/17
1.8 Continuity	2.1 Derivatives and Rates of Change	2.2 The Derivative as a Function	2.3 Differentiation Formulas	6/21
6/20	6/21	6/22	6/23	6/24
2.4 Derivatives of Trigonometric Functions	2.5 The Chain Rule 2.6 Implicit Differentiation	2.7 Rates of Change in the Natural and Social Sciences	2.8 Related Rates 2.9 Linear Approximation and Differentials	6/28
6/27	6/28	6/29	6/30	7/1
Midterm-1	3.1 Maximum and Minimum Values	3.2 The Mean Value Theorem	3.3 How Derivatives Affect the Shape of a Graph 3.4 Limits at Infinity / Horizontal Asymptotes	7/5
7/4	7/5	7/6	7/7	7/8
Holiday	3.5 Summary of Curve Sketching 3.7 Optimization	3.8 Newton's Method 3.9 Antiderivatives	4.1 Areas and Distances 4.2 The Definite Integral	7/12
7/11	7/12	7/13	7/14	7/15
4.3 Fundamental Theorem of Calculus	4.4 Indefinite Integrals and the Net Change Theorem	4.5 The Substitution Rule	5.1 Areas Between Curves	7/19
7/18	7/19	7/20	7/21	7/22
5.2 Volumes	5.3 Volumes by Cylindrical Shells	5.5 Average Value of a Function	Midterm-2	7/23

Summary of Key Dates – Summer 2022:

June 6, Monday
Classes begin.

July 4, Monday
Holiday

July 25, Monday
Final

Getting Help

Technical Assistance

Part of working in the online environment involves dealing with the inconveniences and frustration that can arise when technology breaks down or does not perform as expected. Here at UNT we have a Student Help Desk that you can contact for help with Canvas or other technology issues.

UIT Help Desk: UIT Student Help Desk site (http://www.unt.edu/helpdesk/index.htm)
Email: helpdesk@unt.edu
Phone: 940-565-2324
In Person: Sage Hall, Room 130
Walk-In Availability: 8am-9pm
Telephone Availability:
- Sunday: noon-midnight
- Monday-Thursday: 8am-midnight
- Friday: 8am-8pm
- Saturday: 9am-5pm

Laptop Checkout: 8am-7pm

For additional support, visit Canvas Technical Help (https://community.canvaslms.com/docs/DOC-10554-4212710328)

Student Support Services

UNT provides mental health resources to students to help ensure there are numerous outlets to turn to that wholeheartedly care for and are there for students in need, regardless of the nature of an issue or its severity. Listed below are several resources on campus that can support your academic success and mental well-being:

- Student Health and Wellness Center (https://studentaffairs.unt.edu/student-health-and-wellness-center)
- Counseling and Testing Services (https://studentaffairs.unt.edu/counseling-and-testing-services)
- UNT Care Team (https://studentaffairs.unt.edu/care)
- UNT Psychiatric Services (https://studentaffairs.unt.edu/student-health-and-wellness-center/services/psychiatry)
- Individual Counseling (https://studentaffairs.unt.edu/counseling-and-testing-services/services/individual-counseling)

Other student support services offered by UNT include

- Registrar (https://registrar.unt.edu/registration)
- Financial Aid (https://financialaid.unt.edu/)
- Student Legal Services (https://studentaffairs.unt.edu/student-legal-services)
- Career Center (https://studentaffairs.unt.edu/career-center)
- Multicultural Center (https://edo.unt.edu/multicultural-center)
- Counseling and Testing Services (https://studentaffairs.unt.edu/counseling-and-testing-services)
- Pride Alliance (https://edo.unt.edu/pridealliance)
- UNT Food Pantry (https://deanofstudents.unt.edu/resources/food-pantry)

Academic Support Services

- [Academic Resource Center](https://clear.unt.edu/canvas/student-resources) (https://clear.unt.edu/canvas/student-resources)
- [Academic Success Center](https://success.unt.edu/asc) (https://success.unt.edu/asc)
- [UNT Libraries](https://library.unt.edu/) (https://library.unt.edu/)
- [Writing Lab](http://writingcenter.unt.edu/) (http://writingcenter.unt.edu/)
- [MathLab](https://math.unt.edu/mathlab) (https://math.unt.edu/mathlab)

UNT Policies

Academic Integrity Policy

Academic Integrity Standards and Consequences. According to UNT Policy 06.003, Student Academic Integrity, academic dishonesty occurs when students engage in behaviors including, but not limited to cheating, fabrication, facilitating academic dishonesty, forgery, plagiarism, and sabotage. A finding of academic dishonesty may result in a range of academic penalties or sanctions ranging from admonition to expulsion from the University. [Insert specific sanction or academic penalty for specific academic integrity violation.]

ADA Policy

UNT makes reasonable academic accommodation for students with disabilities. Students seeking accommodation must first register with the Office of Disability Access (ODA) to verify their eligibility. If a disability is verified, the ODA will provide a student with an accommodation letter to be delivered to faculty to begin a private discussion regarding one's specific course needs. Students may request accommodations at any time, however, ODA notices of accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of accommodation for every semester and must meet with each faculty member prior to implementation in each class. For additional information see the [ODA website](https://disability.unt.edu/) (https://disability.unt.edu/).