MATH 1710.120 Calculus I (Spring 2021)

MWF 9:00 – 9:50AM

Zoom ID: 858 5882 6759

Instructor Contact

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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/Course Materials

The textbook is Stewart, James, *Calculus, 8th* Edition, Cengage Learning (2016). 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 8th 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 trial 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.

Your exam and quiz grades will be posted in the lecture Canvas, your WebAssign grades in the WebAssign gradebook, and your worksheet (written assignment) grades in recitation Canvas.

Grading

Homework (WebAssign) – 10%
Recitation (Quizzes & Written Assignments) – 20%
Midterm Exams – 45%
Final Exam – 25%

- 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.)

Students should have no expectation for late work to be accepted.

Homework

Each week there will be homework on WebAssign for the sections covered that week. However, *Getting Familiar with WA*" WebAssign homework is due the second day of the term; and the *Calculus Readiness* homework is Friday of the first week. Starting the 2nd week, homework will be due by 11:59 PM on Tuesday of the following week. For instance, in week 1 we will cover 1.4, 1.5, and 1.6. 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 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. Your lowest four (4) homework scores will be dropped.

On the homework you will generally have 5 attempts on each question with one important exception

Recitation

Each week you will attend recitation twice. You may refer to your recitation syllabus for more information, but you should expect to use this time to ask questions and fill in the gaps left by lecture and homework. You will also have two assignments each week from recitation: a worksheet assigned on Tuesday and due Wednesday night, and a quiz which will be administered and due in recitation on Thursday. Ergo, recitation is required for you to receive full marks in the course. Your lowest two worksheets and your lowest two quizzes will be dropped.

Exams

There will be 3 midterm exams. These will be administered during lecture and will require a Webcam.

You will be required to complete the problems on your own paper and scan and upload your responses for specific problems into Canvas in pdf format. You have 20 minutes from when you submit your exam to make a scan and upload your work. There are many free scanning apps available for phones and tablets (Adobe Scan, Office Lens, Google Drive etc.).

You will be able to see feedback on the exam and your grade within Canvas about 1 week after the exam. You may ask me to go over exam problems with you. However, all decisions on partial credit are final and not open for discussion.

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, according to 06.039 Policy, and provides documentation within 48 hours of the missed exam, then the zero will be replaced by the final exam grade.

Attendance

Attendance is important and required. In this class, this means attending each Zoom meeting for lecture and recitation. 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.

Changes to Syllabus

I reserve the right to amend, append, or otherwise make changes to this syllabus, should the need arise. Any changes will be posted as an Announcement in Canvas.

Course Prerequisites or Other Restrictions

- Officially, the prerequisite is a grade of C or higher in MATH 1650; or grade of C or higher in both MATH 1600 and MATH 1610.
- A willingness to put in several hours of work each week to absorb each the material. 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 on will receive no credit on the assignment; and may receive an F for the course for cheating on an exam. 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 models 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

- Computer, tablet, or laptop that is compatible with all required apps for the course
- A smartphone ***is not*** sufficient
- Reliable internet
- A scientific or basic graphing calculator (TI-84 or equivalent) is recommended
- Scanner (many free apps available for smartphones)
- Webcam/microphone for office hour visits
- Printer, not necessary but helpful

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)

- Download and install software
- Upload documents to Canvas
- Complete assignments on WebAssign

Weekly Modules / Schedule

1. Week 1: Start Here Module, Introduction Module, Submitting Written Work Module; Tangent & Velocity Problems, The Limit of a Function, Calculating Limits with Limit Laws
2. Week 2: Precise Definition of a Limit, Continuity, Derivatives and Rates of Change
3. Week 3: The Derivative as a Function, Differentiation Formula
4. Week 4: Derivatives of Trig Functions, The Chain Rule, Implicit Differentiation
5. Week 5: Rates of Change in the Natural & Social Sciences and EXAM 1
6. Week 6: Related Rates, Linear Approximations and Differentials, Maximum and Minimum Values
7. Week 7: The Mean Value Theorem, How Derivatives Affect the Shape of a Graph
8. Week 8: Limits at Infinity; Horizontal Asymptotes, Summary of Curve Sketching
9. Week 9: Optimization Problems, Newton's Method
10. Week 10: Antiderivatives and EXAM 2
11. Week 11: Areas and Distance, the Definite Integral
12. Week 12: Indefinite Integral and the Net Change Theorem, Substitution Rule
13. Week 13: Areas between Curves and EXAM 3
14. Week 14: Volumes, Volumes by Cylindrical Shells, Average Value of a Function
15. Week 15: Prepare for the Final Exam

Summary of Key Dates – Spring 2021

January 11, Monday
Classes begin.

January 18, Monday
MLK Day (no classes; university closed)

January 26, Tuesday
Beginning this date, a student may drop a course with a grade of W by completing the *Request to Drop Class* form and submitting it to the Registrar's Office.

March 12, Friday
Last day to change to pass/no pass

April 2, Friday
Last day to drop a course

April 3, Saturday
Beginning this date, a student may request a grade of "I", incomplete, a non-punitive grade given only if a student (1) is passing, (2) has justifiable reason why the work cannot be completed on schedule; and (3) arranges with the instructor to complete the work.

April 23, Friday

Reading day; no class

April 24, Saturday – April 30, Friday
Final examinations. Terms ends.

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 (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

Canvas Technical Requirements: Canvas Technical Requirements
(https://clear.unt.edu/supported-technologies/canvas/requirements)

Additional Canvas Support: Canvas Technical Help
(https://community.canvaslms.com/docs/DOC-10554-4212710328)

Cengage WebAssign Technical Support

WebAssign offers student technical support

Phone: 800.354.9707

Website: WebAssign Student Support

Academic Support Services

- UNT Math Lab (https://learningcenter.unt.edu/math-lab)
- UNT Learning Center (https://learningcenter.unt.edu)
- Academic Resource Center (https://clear.unt.edu/canvas/student-resources)

- Academic Success Center (https://success.unt.edu/asc)
- UNT Libraries (https://library.unt.edu/)
- Writing Lab (http://writingcenter.unt.edu/)

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)

UNT Policies

Academic Integrity Policy

Cheating on tests, quizzes or final exams is a serious breach of academic standards and will be punished severely and generally result in a student failing the course. All work done on exams and quizzes must represent only the student's own work, unless otherwise stated in the directions. 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. See Academic Integrity for details on academic integrity at UNT.

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 Office of Disability Access website. (https://disability.unt.edu/).

Emergency Notification and Procedures

UNT uses a system called Eagle Alert to quickly notify students with critical information in the event of an emergency. In the event of a university closure, please refer to Canvas for contingency plans for covering course materials.