MATH 1720.110 CALCULUS II (Fall 2021)

Instructor Contact

Name: Dr. Huettenmueller
Office Location: GAB 411
Office Hours: Mondays only: 12:15-12:45; Mondays and Wednesdays 9:15-10:45
Email: Rhonda.huettenmueller@unt.edu
Communication Expectations: I return email within 24 hours of a school day (that is, no nights/weekends/holidays). I also check Canvas notifications at least once each school day. When you email, please use your UNT email.

Course Description

Differentiation and integration of exponential, logarithmic and transcendental functions; integration techniques; indeterminate forms; improper integrals; area and arc length in polar coordinates; infinite series; power series; Taylor's theorem.

Required Text/Materials

The textbook is Stewart, James, *Calculus, 8th* 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 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.

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. The UNT Bookstore can assist with purchasing decisions.

Grading

Homework (WebAssign) – 15%
Calculus Review – 5%
Recitation Worksheets – 15%
Midterm Exams – 45%
Final Exam – 20%

All exams are taken in the lecture classroom. Recitation worksheets are completed in recitation. WebAssign homework and Calculus Review are assignments in WebAssign.

- 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. This means that there are no make-up exams; recitation worksheets are not accepted late, and WebAssign due dates are not extended. Four worksheet scores will be dropped and four WebAssign homework scores will be dropped.

Course Meets Face to Face

BLB 155, MWF 8:00-8:50. This course will meet in person 3 times per week for lecture and 2 times per week for recitation. There will be regular online homework, 3 midterm exams, an online calculus review written homework, and 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 Friday of the following week. For instance, in week 1 we will certainly cover 6.1 and 6.2*. Thus, the homework on these sections will need to be completed by Friday 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 hours 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 (but not always) have 10 attempts on each question.

Recitation Worksheets

You will complete a worksheet for most recitation meetings. Do not submit your worksheet to Dr. Huettenmueller.

Exams

There will be 3 midterm exams administered in person during lecture. There are **NO** remote/online options for exams. You may ask me to go over exam problems with you. However, all decisions on partial credit are final and not open for discussion.

Here are the tentative exam dates:

Wednesday, September 22

Wednesday, October 20

Wednesday, November 17

Final Exam: Monday, December 6 8:00-10:00

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 and provides documentation with 48 hours of the missed exam, then this zero will be replaced by the final exam grade (this includes missing an exam due to illness/covid-19). This option can only be exercised once.

Recitation

The recitation instructors for this course: John Deines and Colin Lawson

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 not repeat full lectures on a topic. You will also review for exams in recitation. You will receive your graded midterm exams in recitation.

Attendance

Attendance to lecture and recitation 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. You are also responsible for information/announcements given in class, whether you are there or not.

Only students with prior permission from me can view a live class on Zoom. Understand that the session will not be recorded and that the experience will not be the same as in the classroom. For example, if the microphone or video fails during the session, then you will miss material.

Course Prerequisites or Other Restrictions

- Officially, the prerequisite is a grade of C or higher in MATH 1710.
- A willingness to put in several hours of work each week to absorb 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:

- Compute derivatives and antiderivatives of functions built from the basic transcendental functions.
- Understand and apply exponential models to make predictions.
- Resolve limits in an indeterminate form using L'Hopital's rule in concert with other techniques.
- Apply the integration by parts formula to definite and indefinite integrals.
- Compute definite and indefinite integrals of powers and products of trigonometric functions.
- Apply trigonometric substitution to calculate definite and indefinite integrals.
- Develop a rational function in partial fractions and then find an antidervative.

- Recognize the appropriate integration technique.
- Approximate definite integrals.
- Recognize improper integrals and determine if they converge.
- Apply the techniques for finding limits of functions to sequences.
- Evaluate the sums of geometric and telescoping series.
- Understand and apply an appropriate test to determine series convergence.
- Distinguish to between absolute and conditional convergence.
- Represent functions by power series (including determining radius of convergence).
- Use Taylor polynomials in approximation problems.
- Graph parametric curves and determine the slopes of their tangent lines (including horizontal and vertical tangents).
- Express points and curves in polar coordinates.
- Find tangents to polar curves.
- Determine the area of a region bounded by a polar curve.

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

COVID

Face Coverings
UNT encourages everyone to wear a face covering when indoors, regardless of vaccination status, to protect yourself and others from COVID infection, as recommended by current CDC guidelines. Face covering guidelines could change based on community health conditions.

Symptoms
If you are experiencing any symptoms of COVID-19 (https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html) please seek medical attention from the Student Health and Wellness Center (940-565-2333 or askSHWC@unt.edu) or your health care provider PRIOR to coming to campus. UNT also requires you to contact the UNT COVID Team at COVID@unt.edu for guidance on actions to take due to symptoms, pending or positive test results, or potential exposure.

Summary of Key Dates – Fall 2021:

August 23, Monday
Classes begin.

August 27, Friday
Last day for change of schedule other than a drop. (Last day to add a class.)

September 6, Monday
Labor Day (no classes; university closed)

October 1, Friday
Last day to change to pass/no pass

November 12, Friday
Last day to drop a course

November 13, 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.

December 3, Friday
Reading day; no class

December 4, Saturday – December 10, 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 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) (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) (https://studentaffairs.unt.edu/student-health-and-wellness-center)
- [Counseling and Testing Services](https://studentaffairs.unt.edu/counseling-and-testing-services) (https://studentaffairs.unt.edu/counseling-and-testing-services)
- [UNT Care Team](https://studentaffairs.unt.edu/care) (https://studentaffairs.unt.edu/care)
- [UNT Psychiatric Services](https://studentaffairs.unt.edu/student-health-and-wellness-center/services/psychiatry) (https://studentaffairs.unt.edu/student-health-and-wellness-center/services/psychiatry)
- [Individual Counseling](https://studentaffairs.unt.edu/counseling-and-testing-services/services/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) (https://registrar.unt.edu/registration)
- [Financial Aid](https://financialaid.unt.edu/) (https://financialaid.unt.edu/)
- [Student Legal Services](https://studentaffairs.unt.edu/student-legal-services) (https://studentaffairs.unt.edu/student-legal-services)
- [Career Center](https://studentaffairs.unt.edu/career-center) (https://studentaffairs.unt.edu/career-center)
- [Multicultural Center](https://edo.unt.edu/multicultural-center) (https://edo.unt.edu/multicultural-center)
- [Counseling and Testing Services](https://studentaffairs.unt.edu/counseling-and-testing-services) (https://studentaffairs.unt.edu/counseling-and-testing-services)
- [Pride Alliance](https://edo.unt.edu/pridealliance) (https://edo.unt.edu/pridealliance)
- [UNT Food Pantry](https://deanofstudents.unt.edu/resources/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/).

Eagle Alert

Emergency Notification & Procedures. UNT uses a system called Eagle Alert to quickly notify students with critical information in the event of an emergency (i.e., severe weather, campus closing, and health and public safety emergencies like chemical spills, fires, or violence). In the event of a university closure, please refer to Canvas for contingency plans for covering course materials.

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.

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
8/23 Intro to Class Review of u-substitution	8/24 First day Quiz	8/25 6.1 Inverse Functions	8/26	8/27 6.2* Exponent Functions
8/30 6.3* The Natural Exponential Function	8/31	9/1 Finish 6.3* Begin 6.4*	9/2	9/3 6.4* General Logarithmic and Exponential Functions
9/6 Labor Day	9/7	9/8 6.5 Exponential Growth & Decay	9/9	9/10 6.6 Inverse Trigonometric Functions
9/13 Finish 6.6	9/14	9/15 6.8 Indeterminate Forms and L'Hopital's rule	9/16	9/17 7.1 Integration by Parts
9/20 7.2 Trigonometric Integrals	9/21	9/22 Exam 1	9/23	9/24 7.3 Trigonometric Substitutions
9/27 Finish 7.3, Begin 7.4	9/28	9/29 Finish 7.4 Integration of Rational Functions Partial Fractions	9/30	10/1 7.7 Approximate Integration

10/4 Finish 7.7 Begin 7.8	10/5	10/6 7.8 Improper Integrals	10/7	10/8 11.1 Sequences
10/11 11.2 Series	10/12	10/13 11.3 Integral Test and Estimates of Sums	10/14	10/15 Finish 11.3
10/18 11.4 Comparison Tests	10/19	10/20 **Exam 2**	10/21	10/22 11.5 Alternating Series
10/25 Finish 11.5	10/26	10/27 Begin 11.6	10/28	10/29 Finish 11.6 Absolute Convergence and the root and ratio tests
11/1 11.8 Power Series	11/2 No WebAssign 11.7 Strategy for Testing Series	11/3 11.9	11/4	11/5 Finish 11.9 Begin 11.10
11/8 11.10 Taylor and Maclaurin Series	11/9	11/10 Begin 11.11	11/11	11/12 Finish 11.11 11.11 Applications of Taylor Polynomials
11/15 10.1 Curves Defined by Parametric Equations	11/16	11/17 Exam 3	11/18	11/19 10.2 Calculus with Parametric Equations
11/22 10.3 Polar Coordinates	11/23	11/24 10.4 Areas and Lengths in Polar Coordinates	11/25 Thanksgiving Break	11/26 Thanksgiving Break

11/29	11/30	12/1	12/2	12/3
Finish 10.4		Answer Review Questions		**Reading Day**