

Calculus II

HNRS 2414.001 | Spring 2023

Course Description

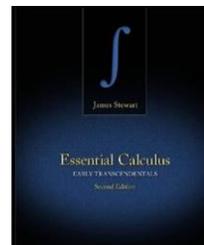
Calculus II is a combination of several topics. First, we will study different techniques for solving integrals, where finding the antiderivative directly is impossible. Next, we will find the volume and surface area of axially symmetric three-dimensional objects. Then we will study sequences and infinite sums with the goal of solving more integrals. Finally, we will learn about the Calculus of circular regions using polar coordinates. We will cover most of the material in Chapters 6 to 9, although some sections will be omitted due to time constraints.

From the catalog, Calculus II is the study of differentiation and integration of transcendental functions, polar coordinates, techniques of integration, sequences, series, indeterminate forms and improper integrals.

Prerequisites: Invitation by the Honors Program and a grade of C or better in HNRS 2413 or MATH 2413 or the equivalent. Students cannot receive credit for both HNRS 2414 and MATH 2414

Textbook

Essential Calculus Early Transcendentals, by James Stewart, Brooks/Cole, Cengage Learning, 2013, Second Edition, ISBN – 10: 1-133-11228-5, ISBN – 13: 978-1-133-11228-0



Website

You will be using Canvas. Go to www.utt Tyler.edu/canvas to log into Canvas using your regular patriots account. If you have enrolled in the course, you should have access to the website. You will find important documents, grades, lecture notes, and announcements on Canvas.

Attendance is mandatory and attendance records will be kept. Notify Dr. Koslover in advance if you must miss a class, be late for a class or leave early. (Official University Policy: Class attendance is the responsibility of the student. When a student has a legitimate absence, the instructor may permit the student to complete missed assignments. In many cases class participation is a significant measure of performance, and non-attendance may adversely affect a student's grade. When a student's absences become excessive, the instructor may recommend that the student initiate a withdrawal.)

Instructor: Dr. Deborah Koslover

Office: RBN 4010

Email: dkoslover@utt Tyler.edu

Classroom: RBN 4021

Meeting Time: MWF 10:30 – 11:45 AM

Office Hours: MTTh 1 – 2 PM, W 4:00 – 5:00 PM, F 1:30 – 2:30 PM or by appointment.

Learning Outcomes

At the conclusion of this course, you will be able to

1. Apply the ideas of definite integrals to solve problems including finding areas under curves and between curves, volumes of cylindrically symmetric objects and work done by a constant or variable force;
2. Apply the techniques of substitution, integration by parts, trigonometric substitution, and partial fractions to evaluate definite and indefinite integrals;
3. Describe the meaning of an improper integral and apply the concepts of limit, convergence, and divergence to evaluate some classes of improper integrals;
4. Define sequences and series and determine convergence or divergence;
5. Find the Taylor and Maclaurin series to represent elementary functions and apply Taylor and Maclaurin polynomials to the integration of functions not integrable by conventional methods;
6. Apply the ideas of polar coordinates to find areas, lengths of curves and representations of conic sections;
7. Model a variety of physical situations using differential equations; and
8. Persuasively communicate mathematical ideas using clear and concise mathematical language including terminology, notation and grammar

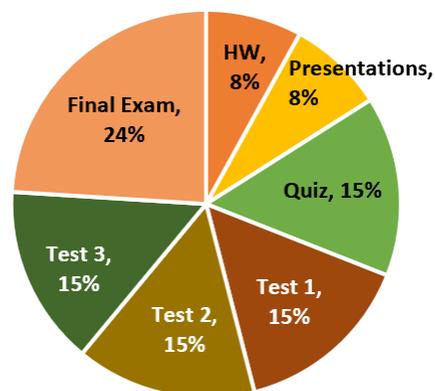
Course Evaluation

At the end of the semester, you will find your final grade on my.uttyler.edu. It will also be posted on Canvas.

A final course grade of

- 90% is guaranteed to be at least an A
- 80% is guaranteed to be at least a B
- 70% is guaranteed to be at least a C
- 60% is guaranteed to be at least a D.

All grades below 60% will be F.



The Plan



Presentations (8%) and homework (8%)

Homework will be assigned daily. Assignments will appear on Canvas. Some homework will come from your textbook and some from other sources. Homework will be due on Wednesday of the following week at 5 AM. Homework must be turned on Canvas. A link will be posted on Canvas for you to submit your assignments. You must scan your homework and submit it as a pdf file. Some free phone scanners are posted on Canvas. Photographs will not be accepted. Homework will be graded for completion. Make sure you write your solutions neatly as they will be used in your presentations.

Homework, in the form of presentations, will be due on Friday one week after it is assigned, Students will be asked to get up and present one or two problems. Dr Koslover will pick out correct solutions from the papers turned in on Wednesday. (She will fix small errors such as dropped constants, if needed.) These solutions will be compiled into a document which will be given to everyone on Friday. You will walk the class through your written solutions. You will be graded on your understanding of the work shown, clarity of presentation and your answers to questions asked.

Students watching the presentations will be awarded points for insightful questions or comments. If you have done a problem in a significantly different fashion than the presenter, you may ask to show your solutions for credit.

Solutions will be posted on Canvas. I will make copies of good clear answers written by your fellow students. Do not sell answers to Chegg or similar websites. Do not pass down the solutions to future generations of students.



(15%): There will be three quizzes. Each quiz will take about 15 minutes. Athletes, please plan to take your quizzes before your trips. The quizzes will be easier than the tests. The quizzes will be held on Monday, January 23, Monday, February 20 and Monday, March 27.

TESTS There will be three tests (**15% each**) and a **final exam (24%)**. These exams will test your knowledge of the material taught in the class and practiced on the homework. Test problems will be similar to homework problems, but generally shorter. The final exam will be comprehensive but will emphasize material in the final third of the course. Answers will be worth almost nothing, only the solutions matter. Credit will only be given for use of Calculus techniques to solve problems.

The dates and times of these exams are as follows:

- **Test 1:** Monday, February 6, 2023
- **Test 2:** Monday, March 6, 2023
- **Test 3:** Monday, April 10, 2023



FINAL EXAM

Final Exam: Wednesday, April 26, 2023, 10:15 AM – 12:15 PM

Make-ups

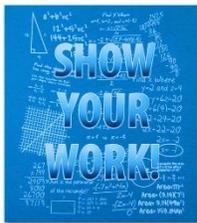
Make-ups for **documented** absences that are **required** as part of a UT Tyler obligation (e.g. athletes participating in an event, participating in a debate contest, etc.) or for religious observation will be granted. For all make-ups of this type, prior notification of at least one week and documentation are required. Other make-ups are granted only in extreme cases such as hospitalization and at the sole discretion of the instructor.



Make-ups will be allowed for the following excused absences.

- 1) Illnesses, with a doctor’s note, no exceptions.
- 2) Your child’s illness, with a doctor’s note.
- 3) Court appearances, including citizenship court, with documentation
- 4) Weddings, funerals or military advancement with documentation **and** a photograph or program showing that you attended the event.

Other Details



Calculator Policy: No calculators or other electronic devices may be used on tests or the final exam. During the exam, you must place your cell phone on the desk where it is visible. If you need to use the restroom during the exam, you must leave your phone on the desk or with the professor.

Cell phones, IPODs and other electronic devices: Please set your cell phones and pagers to silent mode. If you are expecting an emergency call, please notify the instructor in advance, sit near the door, and answer the phone outside. You will not be allowed to wear an IPOD or other electronic devices during an exam. During tests, cell phones must be turned off and placed in sight on your desk. If you need to use the restroom during the exam, you must leave your phone on the desk or with the professor.



Covid Related Issues

Let me know if you will be missing class, before class if possible. If we have class cancellations or if the university gets shut down, I may move test or quiz dates. I will email you and post an announcement on Canvas in these circumstances. If we get into a situation where we must do online tests or quizzes, you will need a camera and microphone. I must be able to see

your face during the exam. Your phone will work, but it will be easier for you if you can use your computer. Additionally, in this case, some tests may be changed to projects.

If you have any special concerns, problems or other issues, please let me know as soon as possible so that we can craft solutions.

Calendar			FEBRUARY			MARCH			APRIL		
			MON	WED	FRI	MON	WED	FRI	MON	WED	FRI
JANUARY			30	1	3	27	1	3	3	5	7
MON	WED	FRI									
9	11	13									
First Day			6	8	10	6	8	10	10	12	14
16	18	20	Test 1			Test 2			Test 3		
MLK Day			13	15	17	13	15	17	17	19	21
23	25	27				Spring Break					
Quiz 1 Census Day			20	22	24	20	22	24	24	26	28
HW due on Wed Presentations on Fri			Quiz 2							Final Exam	
			Drop Day, March 23			27	29	31	Final 10:15 AM – 12:15 AM		
						Quiz 3					