

Math 1320-009, Engineering Calculus II

Spring 2022. MTWF 8:35-9:25. BU C 105.

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Text: Calculus: Concepts and Contexts 4th Edition, by James Stewart (ISBN-13: 978-0-495-55742-5)

Course Description: Differential and Integral Calculus II, with a focus on applications and projects for engineers: integral expressions for moments, centers of mass, and work; infinite series and sequences; power series and Taylor series; vectors, dot and cross products, and the geometry of space; the calculus of vector functions and particle motion in space; differential calculus for functions of several variables, including linear approximation, partial and directional derivatives, chain rule, and multi-variable optimization; multivariable integration in cartesian and polar coordinates and applications. We will cover most of Sections 6.4-12.5 of the text.

Prerequisites: "C" or better in MATH 1310 or 1311, or AP Calc BC score of 3 or better, or Department Consent.

Canvas: We will be using the Canvas page for this course to post course materials, homework, grades, and announcements. Links to zoom lectures (if necessary) and recordings will also be available through Canvas. Students should check their current Canvas notification settings to ensure they stay up to date. You can access Canvas through CIS or by logging in at utah.instructure.com

Expectations: It is expected that students attend and engage in lecture whenever possible. This includes, but is not limited to, paying attention, asking questions, and participating in activities and group work. Calculators may be used on homework but will not be allowed during exams. In person and zoom lectures and labs, discussion threads, email, and canvas are all considered classroom settings so student behavior in each should be in line with the student code. Students are encouraged to maintain communication with their instructor; I can not help you if I do not know that there is a problem.

About Grading and Assessments:

Grade Breakdown:

| | Percentage of Final Grade |
|-----------------------------|---------------------------|
| Homework | 20% |
| Labs | 20% |
| Learning Objectives Mastery | 60% |

Grade Scale: The base grade scale is below. These thresholds may be lowered at the end of the semester, but will not be raised.

| | + | | - |
|----------|--------|-------|-------|
| A | 98-100 | 92-98 | 90-92 |
| B | 88-90 | 82-88 | 80-82 |
| C | 78-80 | 72-78 | 70-72 |
| D | 68-70 | 62-68 | 58-62 |
| E | | 0-58 | |

Homework: One homework problem will be assigned per topic; approximately one per section of the text book, due each Wednesday at the end of the day. These problems will be posted on Canvas in a pdf. Your solution and write up of the problem are just as important as your answer. Homework can be handwritten or typed but is expected to be neatly written and organized, easy to read and understand, with explanations and complete sentences. "Warm up" homework problems from the text book will also be assigned but not collected and are highly recommended. The purpose of warm up homework is for students to practice computational skills and to familiarize themselves with various concept applications. Homework assignments are designed to improve students' technical writing and ability to communicate mathematics, and to assess a students current understanding of course content. Students are encouraged to work together on homework, but should turn in their own write up of the problems.

Labs: Lab is not an optional component of the course, and as such it is worth 20% of the grade. Lab problems are chosen to teach students to apply the tools they learn in lecture to both physical scenarios and in-depth mathematical problems. Labs facilitate problem solving, team work, group discussion and technical writing.

Exams: There will be three exams given during the semester on the following Fridays during the scheduled class period: February 11, March 18, and April 15. The final exam period is scheduled by the University for Monday, May 2, 8:00-10:00 am in the regular classroom. Exams are written to assess current knowledge and understanding of course content. We will use a standards based grading system where students are assessed by learning objective and have the opportunity to improve these scores throughout the semester. A full explanation of standards based grading can be found in the document Mastery Grading for 2210-009, on Canvas.

Make-Up Policy: Students with university excused absences should make alternative arrangements with me as soon as possible if the absences interfere with any course components. If a student expects to miss assignment due dates or an exam, they are required to notify the instructor in advance, in person or by e-mail. The validity of excuses, whether given in advanced or not, will be handled on a case-by-case basis. As per university policy the final exam may not be taken early. The instructor reserves the right to alter the questions and format of any make-up assignment given. To accommodate for busy weeks and bad days, **one lowest lab score and one lowest homework score will be dropped from the grade.**

Academic Dishonesty: Cheating in any form will not be tolerated and may result in a failing grade for the relevant assignment or exam and/or a failing grade in the course. The guidelines in University of Utah Policy 6-400: Code of Student Rights and Responsibilities will be followed.

You are not allowed to post graded lab, homework or exam problems to any websites or message boards (including Chegg, Math Stack Exchange, and the Canvas discussion board). You are not allowed to ask anyone for help during exams.

About the Mathematics:

Tutoring and Resources: Free tutoring offered at the T. Benny Rushing Mathematics Center, which is physically located in the basement between the JWB and LCB buildings. The hours are 8 am to 8 pm Monday through Thursday and 8 am to 6 pm on Fridays. Their schedule indicates which tutors are fluent in languages other than English. The link to online tutoring and more information can be find here:

<https://www.math.utah.edu/undergraduate/mathcenter.php>

The math department has a full set of lecture videos which you are welcome to use to supplement our course material. These can be found at <http://www.math.utah.edu/lectures/>

Important Dates:

First Day of Class- Monday, January 10
MLK Jr Day (No Class)- Monday, January, 17
Last day to add or drop – Friday, January 21
Exam Day 1- Friday, February 11
President's Day (No Class)- Monday, February 21
Last day to withdraw- Friday, March 4
Spring Break (No Classes)- March 6-13
Exam Day 2- Friday, March 18
Exam Day 3-Friday, April 15
Last Day of Classes- Tuesday, April 26
Reading Day- Wednesday, April 27
Final Test Day- Monday, May 2, 8-10 am

About the Classroom:

Accommodations: The Americans with Disabilities Act requires that reasonable accommodations be provided for students with physical, cognitive, systemic learning, and psychiatric disabilities. If you will need accommodations in this class, reasonable prior notice needs to be given to the instructor and to the Center for Disability & Access (162 UNION , 801-581-5020). All written information in this course can be made available in alternative format with prior notification to the Center for Disability & Access.

Student Names and Personal Pronouns: Class rosters are provided to the instructor with the student's legal name as well as Preferred first name (if previously entered by you in the Student Profile section of your CIS account). While CIS refers to this as merely a preference, I will honor you by referring to you with the name and pronoun that feels best for you in class, on papers, exams, group projects, etc. Please advise me of any name or pronoun changes (and update CIS) so I can help create a learning environment in which you, your name, and your pronoun will be respected. If you need assistance getting your preferred name on your UIDcard, please visit the LGBT Resource Center Room 409 in the Olpin Union Building, or email bpeacock@sa.utah.edu to schedule a time to drop by. The LGBT Resource Center hours are M-F 8am-5pm, and 8am-6pm on Tuesdays.

Student Responsibilities: All students are expected to maintain professional behavior in the classroom setting, according to the Student Code, spelled out in the Student Handbook. Students have specific rights in the classroom as detailed in Article III of the Code. The Code also specifies proscribed conduct (Article XI) that involves cheating on tests, plagiarism, and/or collusion, as well as fraud, theft, etc. Students should read the Code carefully and know they are responsible for the content. According to Faculty Rules and Regulations, it is the faculty responsibility to enforce responsible classroom behaviors, and I will do so, beginning with verbal warnings and progressing to dismissal from class and a failing grade. Students have the right to appeal such action to the Student Behavior Committee.

<http://regulations.utah.edu/academics/6-400.php>

Covid-19 Considerations: Students must self-report if they test positive for COVID-19 via coronavirus.utah.edu

Addressing Sexual Misconduct: Title IX makes it clear that violence and harassment based on sex and gender (which includes sexual orientation and gender identity/expression) is a civil rights offense subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such as race, national origin, color, religion, age, status as a person with a disability, veterans status or genetic information. If you or someone you know has been harassed or assaulted, you are encouraged to report

it to the Title IX Coordinator in the Office of Equal Opportunity and Affirmative Action, 135 Park Building, 801-581-8365, or the Office of the Dean of Students, 270 Union Building, 801-581-7066. For support and confidential consultation, contact the Center for Student Wellness, 426 SSB, 801-581-7776. To report to the police, contact the Department of Public Safety, 801-585-2677(COPS).

Student Wellness: Personal concerns such as stress, anxiety, relationship difficulties, depression, cross-cultural differences, etc., can interfere with a student's ability to succeed and thrive at the University of Utah. For helpful resources contact the Center for Student Wellness at www.wellness.utah.edu or 801-581-7776.

University Counseling Center: The University Counseling Center (<https://counselingcenter.utah.edu/>) provides developmental, preventive, and therapeutic services and programs that promote the intellectual, emotional, cultural, and social development of University of Utah students. They advocate a philosophy of acceptance, compassion, and support for those they serve, as well as for each other. They aspire to respect cultural, individual and role differences as they continually work toward creating a safe and affirming climate for individuals of all ages, cultures, ethnicities, genders, gender identities, languages, mental and physical abilities, national origins, races, religions, sexual orientations, sizes and socioeconomic statuses.

Campus Safety: The University of Utah values the safety of all campus community members. To report suspicious activity or to request a courtesy escort, call campus police at 801-585-COPS (801-585-2677). You will receive important emergency alerts and safety messages regarding campus safety via text message. For more information regarding safety and to view available training resources, including helpful videos, visit safeu.utah.edu

Syllabus Subject to Change: This syllabus is meant to serve as an outline for our course. Please note that I may have to modify sections as the semester progresses. Any changes will be announced in class and on Canvas with reasonable time for students to adjust.