

MATH 1320- Engineering Calculus II

Section 001, Fall 2021

COURSE DESCRIPTION and INSTRUCTOR INFORMATION

Course Description:

- **Course Number and Title:** Math 1320-001, Engineering Calculus II
Semester and Year: Fall 2021
- **Course Overview:** 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. This is a 4 credit hour course that satisfies a quantitative reasoning requirement.
- **Meeting Days and Times:** Mondays, Tuesdays, Wednesdays and Fridays, 8:35am-9:25am.
- **Location:** ST 104.

Instructor Information:

- **Instructor:** Suo-Jun Tan
- **Email:** suojun.tan@utah.edu or through canvas message
- **Office Hours:** TBD
- **Teaching Goals:** My goal is to provide a well-structured course in which each student is successful, enjoys the learning experience, and gains skill and confidence in logical reasoning.

COURSE DETAILS & RESOURCES

- **Prerequisite:** "C" or better in (MATH 1310 OR MATH 1311) OR AP Calc BC score of 3 or better OR Department Consent
- **Course Materials:**
 - **Lecture notes:** I prepare for class by writing notes before class. These will be the primary source for class content and they will be available on Canvas (usually at least 3 days before class so that you have time to print them out if you want). They will contain gaps where we will fill in together in class. After each class, I will post the filled-in version on canvas.
 - **Textbook:** The textbook for this class (and also Math 1310, 1311, and 1321) is the fourth edition of James Stewart, Calculus, Concepts and Contexts, Brooks/Cole, 2010, ISBN-10: 0495557420, ISBN-13: 978-0495557425. This semester we will cover Chapters 6 and 8–12.
- **Technical requirements:**
 - You may find it helpful to have a graphing calculator for your own personal use (including doing homeworks). However, you will not be allowed to bring any calculator to the exams.
- **Attendance & Punctuality:**

Attendance is strongly encouraged because the best way to learn maths other than listening/watching is through asking and answering questions. I will also be discussing some homework problems in the class. While I will not be taking attendance, I will ask you to do surveys/polls on canvas on random days at random times. This is to give myself an idea how attendance will affect grades throughout the semester. I will also use them to determine whether any (minor) adjustment to your final grades can be made.
- **UofU Learning Support:**
 - Math Center Online Tutoring, (Paid for by Your Student Fees)
<https://www.math.utah.edu/undergraduate/mathcenter.php>
 - The Learning Center, 3 free tutoring sessions, \$5 after that, learning consultations
<https://learningcenter.utah.edu/>
 - Student Success Advocates <https://ssa.utah.edu>
- **General Help:**
 - Here is information from the University about logistics in light of COVID-19. There is also information about financial assistance, counseling, the food pantry, and much more. <https://coronavirus.utah.edu/#students>

COVID-19 CONSIDERATIONS:

University leadership urges all faculty, students, and staff to model the vaccination, testing, and masking behaviors we want to see in our campus community. These include:

- **Vaccination:** Get a COVID-19 vaccination if you have not already done so. Vaccination is proving highly effective in preventing severe COVID-19 symptoms, hospitalization and death from coronavirus. Vaccination is the single best way to stop this COVID resurgence in its tracks. Visit <http://mychart.med.utah.edu/>, <http://alert.utah.edu/covid/vaccine>, or <http://vaccines.gov/> to schedule your vaccination.
- **Masking:** While masks are no longer required outside of Health Sciences facilities, UTA buses and campus shuttles, CDC guidelines now call for everyone to wear face masks indoors.
- **Testing:** If you are not yet vaccinated, get weekly asymptomatic coronavirus tests. This is a helpful way to protect yourself and those around you because asymptomatic individuals can unknowingly spread the coronavirus to others. Saliva based testing is available at alert.utah.edu/covid/testing.
- **Self-Reporting:** All of us, including faculty, students, and staff, must self-report if we test positive for COVID-19 via this website: <https://coronavirus.utah.edu/>.

COURSE EXPECTED LEARNING OUTCOMES (ELOs)

1. Have a basic conceptual understanding of limits.
2. Know how to differentiate and integrate polynomial, rational, logarithmic, and exponential functions.
3. Use derivatives to gather information about the shape of the curve and use that information to graph the curve $y = f(x)$, for polynomial, logarithmic, exponential and simple rational functions.
4. Understand how to use differentiation to optimize functions for business applications, such as maximizing profit examples.
5. Use integration to find area under curves and for business examples such as average value.
6. Take partial derivatives of basic functions of two variables.

COURSE DESIGN

- **Lectures:** Classes will combine lecture with time to discuss and practice material. Active Participation is encouraged. Handwritten notes will be available on Canvas.
- **Homework (15%):** Homework will be assigned on WebWork. Each homework contains questions from several sections. The lowest three scores will be dropped at the end of the semester.
- **Quizzes (15%):** Weekly quizzes will be available on Canvas and they will be available on Mondays. You can do the quizzes any time you want but you must complete the quizzes by the due dates (Fridays 11:59pm most weeks). Quizzes will be timed for 40 minutes and each cover sections from previous week. It should only take you about 20-25 minutes to finish and the extra time is given for file uploads. You will be allowed to use your notes, previous homework assignments, textbook, and a calculator to complete them. The lowest 3 quiz grades will be dropped.
- **Labs (15%):** In the labs you will work with partners on projects of greater depth to improve and solidify your understanding of the concepts we discuss in class. The last lab session, and those before a midterm exam, will be used for additional review. Lab details will be announced.
- **Midterm Exams (17.5%+17.5%):** Two approximately hour-long midterm exams will be given during class on Friday, October 1 and Friday, November 12. Details about midterm exams will be announced on Canvas.
- **Final Exam (20%):** A two-hour comprehensive exam will be given on

Friday, December 17, 2021
8:00 – 10:00 am.

The exam will cover the entire semester. Details about final exam will be announced on Canvas.

ASSESSMENTS, GRADING, LATE POLICY, GRADES

Assignment Category	Contribution to Grade	Adjustments (dropped at the end of the semester)
WebWork Homework	15%	Lowest 3
Quizzes	15%	Lowest 3
Labs	15%	Lowest 3
Midterm Exams	17.5%+17.5%	
Final Exam	20%	

The grade scale is:

A [93-100),
A- [90-93),
B+ [87-90),
B [83-87),

B- [80-83),
C+ [77-80),
C [73-77),
C- [70-73),

D+ [67-70),
D [63-67),
D- [60-63),
E [0-60).

If a grade is recorded incorrectly, it is the student's responsibility to let the instructor know in a timely manner (at the latest within 2 weeks of when the grade was recorded.)

Late/Makeup Work:

The course is designed to provide flexibility if you occasionally cannot turn work in on time by dropping a certain number of scores at the end of the semester. But in general, you are expected to turn things in on time and take quizzes and exams at the times given. If there are extenuating circumstances, please contact me in a timely way to discuss alternatives. If the situation is one that can be documented, you may be asked to provide documentation.

The University of Utah student code allows for making up quizzes or exams in advance for "officially sanctioned University Activities ..., or government obligations, or religious obligations". Please contact me at least one week in advance of any events.

Credit/No Credit Option:

- If you are taking Math 1100 to meet a major or minor requirement, then you should opt for a letter grade, rather than credit/no credit (CR/NC).
- This is the official University description of the credit/no credit option: "The credit/no credit (CR/NC) option allows a student to enroll in selected courses outside of his/her academic plan, without the pressure of competing for a letter grade. By electing CR/NC, students are expected to complete the same work as students enrolled for letter grades." If you are interested in credit/no credit, consult the following:
 - University guidelines: <https://catalog.utah.edu/#/policy/B12v3LX0G?bc=true&bcCurrent=Grading%20Poli>
 - Dates for Choosing CR/NC <https://registrar.utah.edu/academic-calendars/spring2021.php>
 - Consider speaking with an academic advisor to determine whether this is a good option.

Incompletes: According to university policy, to be considered for an incomplete, a student must have 20% or less of the course work remaining and be passing the course with a C or better. You must request an incomplete grade and I will consider giving that grade only under exceptional circumstances.

COMMUNICATION

- All course materials, such as lecture slides, assignments, solutions, grades, etc. will be posted on the Course Canvas site.
- Class announcements will be done via email through the Canvas server and in the Canvas announcements page. You will be responsible for any information contained in them as well as the information announced in class. Students are also strongly advised to set up notifications for canvas so they do not miss any important notifications.
- It is your responsibility to also regularly check your Umail (make sure you set up forwarding if you do not check it regularly), your Umail is the only way for me to communicate privately with you, there will be occasions during the semester that we may need to reach out to you individually (e.g. regarding a grade or assignment) and it is in your best interest to respond promptly.
- Feel free to contact me by email for questions, I will do my best to answer emails within 24 hours. I would like to encourage you to email me only if it is something personal that requires individual attention, if instead you have questions about logistics of the class, course material and assignments, and anything else your classmates may wonder as well, please post a question on the Discussions Board instead. This way the information is shared quickly to the entire class, and each of you can benefit from seeing other classmates' questions.

ACADEMIC CODE OF CONDUCT

Students are encouraged to review the Student Code for the University of Utah: <https://regulations.utah.edu/academics/6-400.php>. In order to ensure that the highest standards of academic conduct are promoted and supported at the University, students must adhere to generally accepted standards of academic honesty, including but not limited to refraining from cheating, plagiarizing, research misconduct, misrepresenting one's work, and/or inappropriately collaborating. A student who engages in academic misconduct as defined in Part I.B. may be subject to academic sanctions including but not limited to a grade reduction, failing grade, probation, suspension or dismissal from the program or the University, or revocation of the student's degree or certificate. Sanctions may also include community service, a written reprimand, and/or a written statement of misconduct that can be put into an appropriate record maintained for purposes of the profession or discipline for which the student is preparing.

ADDITIONAL POLICIES AND RESOURCES

Plagiarism and Academic Integrity: Academic integrity means that scholars, including students, conduct their work ethically. This includes taking credit only for work they themselves perform. Violations of academic integrity undermine the principle of fairness, devalue your degree, and leave you underprepared for applying what you have been taught. In this way, it defrauds you, your classmates, the university, and the people you will serve with your education after graduation. It includes cheating on tests and other assessments, collaborating on projects when not permitted to, presenting other people's work as yours (whether they agree to that), and more.

Plagiarism is a serious offense against academic integrity that could result in failure for the test or paper, failure for the course, and expulsion from the university. Plagiarism usually involves passing off the work, words, or ideas of others as your own without giving proper credit.

Inclusivity Statement: It is my intent that students from all diverse backgrounds and perspectives be well served by this course, that students' learning needs be addressed both in and out of class, and that the diversity that students bring to this class be viewed as a resource, strength and benefit. It is my intent to present materials and activities that are respectful of diversity: age, color, disability, gender, gender identity, gender expression, national origin, political affiliation, race, religion, sexual orientation, and veteran status, and other unique identities. gender, sexuality, disability, age, socioeconomic status, ethnicity, race, culture, and other unique identities. Your suggestions are encouraged and appreciated. Please let me know ways to improve the effectiveness of the course for you personally or for other students or student groups. In addition, if any of our class meetings conflict with your religious events, please let me know so that we can make arrangements for you.

Discrimination and Harassment: 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 Office of the Dean of Students, 270 Union Building, 801-581-7066. To report to the police, contact the Department of Public Safety, 801-585-2677(COPS). Please see Student Bill of Rights, section E <http://regulations.utah.edu/academics/6-400.php>. I will listen and believe you if someone is threatening you.

Names/Pronouns. Canvas allows students to change the name that is displayed AND allows them to add their pronouns to their Canvas name. 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, which managed can be managed at any time). 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 or on assignments. Please advise me of any name or pronoun changes so I can help create a learning environment in which you, your name, and your pronoun are respected. If you need any assistance or support, please reach out to the LGBT Resource Center. https://lgbt.utah.edu/campus/faculty_resources.php

Privacy Policy. FERPA, the federal law that guards student privacy, prohibits me from discussing your performance in this class with anyone except you without your permission, which must be on file with the university, not simply told to me. To ensure compliance with this law, send e-mail with a university e-mail address or via Canvas mail.

Out of respect for the privacy of your classmates, do not record or screenshot any part of this class for use outside of this class, even if you omit identifying information about the speaker or poster. You may not circulate or share images, clips, or other course materials with individuals who are not enrolled in this class. Doing so is a serious violation of our class ethical code and will result in a charge of academic misconduct.

English Language Learners. If you are an English language learner, please be aware of several resources on campus that will support you with your language and writing development. These resources include: the Writing Center (<http://writingcenter.utah.edu/>); the Writing Program (<http://writing-program.utah.edu/>); the English Language Institute (<http://continue.utah.edu/eli/>). Please let me know if there is any additional support you would like to discuss for this class.

Undocumented Student Support. Immigration is a complex phenomenon with broad impact—those who are directly affected by it, as well as those who are indirectly affected by their relationships with family members, friends, and loved ones. If your immigration status presents obstacles to engaging in specific activities or fulfilling specific course criteria, confidential arrangements may be requested from the Dream Center. Arrangements with the Dream Center will not jeopardize your student status, your financial aid, or any other part of your residence. The Dream Center offers a wide range of resources to support undocumented students (with and without DACA) as well as students from mixed-status families. To learn more, please contact the Dream Center at 801.213.3697 or visit dream.utah.edu.

Veterans Center. If you are a student veteran, the U of Utah has a Veterans Support Center located in Room 161 in the Olpin Union Building. Hours: M-F 8-5pm. Please visit their website for more information about what support they offer, a list of ongoing events and links to outside resources: <http://veteranscenter.utah.edu/>. Please also let me know if you need any additional support in this class for any reason.

Wellness Statement. 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.

Student Success Advocates: The mission of Student Success Advocates is to support students in making the most of their University of Utah experience (ssa.utah.edu). They can assist with mentoring, resources, etc. Any student who faces challenges securing their food or housing and believes this may affect their performance in the course is urged to contact a Student Success Advocate for support (<https://asuu.utah.edu/displaced-students>).

The Americans with Disabilities Act:

The University of Utah seeks to provide equal access to its programs, services and activities for people with disabilities. If you will need accommodations in the class, reasonable prior notice needs to be given to the Center for Disability & Access, 162 Olpin Union Building, 801-581-5020. CDA will work with you and the instructor to make arrangements for accommodations. All written information in this course can be made available in alternative format with prior notification to the Center for Disability & Access.

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, veteran's status or genetic information. If you or someone you know has been harassed or assaulted on the basis of your sex, including sexual orientation or gender

identity/expression, you are encouraged to report it to the University's Title IX Coordinator; Director, Office of Equal Opportunity and Affirmative Action, 135 Park Building, 801-581-8365, or to 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 police, contact the Department of Public Safety, 801-585-2677(COPS).

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

University Counseling Center The University Counseling Center (UCC) 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. More information about the counseling center, including ways to contact them, can be found here: <https://counselingcenter.utah.edu/>.

Office of the Dean of Students The Office of the Dean of Students is dedicated to being a resource to students through support, advocacy, involvement, and accountability. It serves as a support for students facing challenges to their success as students, and assists with the interpretation of University policy and regulations. Please consider reaching out to the Office of Dean of Students for any questions, issues and concerns. 200 South Central Campus Dr., Suite 270. Monday-Friday 8 am-5 pm. Their phone number is 801-582-7066.

Syllabus subject to change: This syllabus is meant to serve as an outline and guide for our course. Please note that I may modify it with reasonable notice to you. I may also modify the Course Schedule to accommodate the needs of our class. Any changes will be announced in class and posted on Canvas.