

Mathematics 2210

Spring 2021

Instructor: Jason Hoag
Office Location: JWB 121 (Only meeting over Zoom this semester)
Email Address: hoag@math.utah.edu (Prefer communication via Canvas Mail)
Class Web Page: Canvas

Accessibility & Support: I will be available sometimes before but always right after class in Zoom for any quick questions. Otherwise, I am available via Canvas mail throughout the week. If you send an email Monday-Friday you can expect a response within 24 hours. On weekends I make no guarantees, however I still try to check my email regularly.

Course Type: Interactive Video Conferencing (IVC)

Class Time and Place: 10:45-11:35 a.m.
Mondays, Wednesdays, and Fridays
on Zoom

Attendance & Punctuality: While this course is being delivered via Zoom it will be delivered synchronously. This means you are expected to attend the Zoom meetings at the time this class is listed. I understand life circumstances may interfere with your ability to attend every class and to accommodate for these scenarios I drop several quizzes and homework assignments. Because of this policy I am not very lenient on absences beyond those allowed by this policy apart from extreme circumstances. I will also record and post lectures to accommodate students who do not make class, however, if technical problems arise not all lectures may be made available. I do not directly grade attendance, however, there will be in class quizzes weekly which may not be made up.

COVID-19 Considerations: Students must self-report if they test positive for COVID-19 via coronavirus.utah.edu. Even though this class is delivered online I understand the stress related to contracting COVID-19 or having a household member contract COVID-19. If this kind of situation happens to you please reach out to me as soon as possible so that I may work with you to keep you up in the course.

Office Hours: Official office hours are TBD, however, I am always available to meet briefly directly after class. Additionally, I am always willing to set up times for students who cannot meet during regular office hours.

Text: Calculus with Differential Equations, by Varberg, Purcell, and Rigdon (9th edition); ISBN-13: 9780132306331

For information on purchasing the textbook, go to <http://www.math.utah.edu/schedule/bookInfo/>

Course Information: Math 2210, Calculus III is a 3-credit semester course.

Prerequisite: "C" or better in (MATH 1220 OR MATH 1250 OR MATH 1320) OR AP Calculus BC score of at least 4.

Course Description: Vectors in the plane and in 3-space, differential calculus in several variables, integration and its applications in several variables, vector fields and line, surface, and volume integrals. Green's and Stokes' theorems.

Expected Learning Outcomes:

Upon successful completion of this course, students will be able to:

1. Perform basic vector computations, as well as dot and cross products of two vectors and projection of one vector onto another vector.
2. Convert between cylindrical, rectangular and spherical coordinates. Understand when it's prudent to switch to one coordinate system over another in computing an integral.
3. Determine the equation of a plane in 3-d, including a tangent plane to a surface in 3-d.
4. Find the parametric equations of a line in 3-d.
5. Perform calculus operations on functions of several variables, including limits, partial derivatives, directional derivatives, and gradients; understand what the gradient means geometrically.
6. Find maxima and minima of a function of two variables; use Lagrange Multipliers for constrained optimization problems.
7. Understand divergence and curl of a vector field.
8. Compute double and triple integrals in rectangular, spherical and cylindrical coordinates; proper use of double or triple integrals for finding surface area or volume of a 3-d region.
9. Compute line and surface integrals.
10. Determine if a vector field is conservative and if so, find the corresponding potential function.
11. Use and understand when to apply Green's Theorem, Gauss' Divergence Theorem and Stokes Theorem.

Course Design: This course will use instructor driven online lectures that will be delivered via Zoom video conferencing on Canvas during class days and times. All assessments for this course will also be held during class time via Canvas and Zoom unless otherwise stated.

Quizzes and several exams will be given during class. Additionally, graded worksheets may be given in class. I will record all lectures, but if technical errors occur there may be missed recordings. You should come to class ready to take notes and ask questions. I strive to have an interactive class where students solve problems and asks questions as they participate in active learning assignments. This may include individuals, groups or breakout rooms where students work in small groups.

Grading: The grades will be calculated as follows:

Homework	17%
Quizzes	15%
Midterm	17%
Midterm	17%
Midterm	17%
Final Exam	17%

Grading Scale: Although I'm not philosophically opposed to curving grades, I find it's rarely necessary. The grade scale will be the usual:
A (93-100), A- (90-92.99), B+ (87-89.99), B (83-86.99), B- (80-82.99), C+ (77-79.99), C (73-76.99), C- (70-72.99), D+ (67-69.99), D (63-66.99), D- (60-62.99), E (0-59.99).
If I do need to curve the grades, I will simply shift everything down by a few points (whatever is necessary).

Homework: I will assign homework **every** week and it will be due the following **Wednesday** of each week. All of the homework assigned from the sections covered in the previous week are due at that time (Midnight).

Homework will be graded for both completion and correctness. I will select a few problems that will be graded each week and you will also receive some credit for completion. This does not mean you will receive completion credit for turning it in. You will need to show all necessary steps and calculations. If you do not show work you will not receive full credit on your homework assignment.

All homework will be turned in on Gradescope (a software for grading assignments). It is your responsibility to make sure you have submitted all homework by the given due dates. No late homework will be accepted.

To allow for illness, oversleeping, hectic schedules, etc. **your two lowest homework assignments will be dropped**. Do not ask for special favors with regard to the homework policy, unless the circumstances are extraordinarily severe. This policy is meant to be flexible enough to cover all reasons.

Weekly Quizzes: There will be weekly in-class quizzes, every **Friday**, unless otherwise specified. I reserve the right to start the quiz at any time during the Friday class period, however I will usually end class with the quiz. The quiz will cover the material covered in the previous week and will usually align with the homework that was just turned in. Quiz questions will be taken from textbook examples, class examples, assigned problems or problems very much like those problems. There will be no make-up quizzes. No exceptions. If you're late to class or miss class and thus miss the quiz for any reason whatsoever, you will have to use that as one of your dropped quiz scores. **Your lowest two quiz scores will be dropped.**

Midterms: There will be three midterm exams throughout the semester. Each exam will be taken during the regular class period via Zoom.
The first midterm will be on **Friday, February 19th**.
The second midterm will be on **Friday, March 19th**.
The third midterm will be on **Friday, April 9th**.

Final Exam: The final exam for this class is comprehensive and will occur during the regularly scheduled final exam time, given by the University.
For Spring 2021 the final exam is scheduled on **Wednesday, May 5th**, from **10:30-12:30 am**. Please put this date in your calendar now, as there will be no opportunity for a later or make-up final exam. The exam will be given online and proctored remotely. You have until February 5th to inform me of a conflict with another final. No exceptions made for any other conflicts. You can see the University set finals schedule here <https://registrar.utah.edu/academic-calendars/final-exams-spring.php>

**Official Drop/
Withdraw Dates:** The last day to drop classes is January 29th; the last day to withdraw from this class is March 12th. Please check the academic calendar for more information pertaining to dropping and withdrawing from a course. Withdrawing from a course and other matters of registration are the student's responsibility.

Holidays: There will be no class on Monday, February 15th (Presidents' Day), Friday, March 5th, and Monday, April 5th. Note there is no spring break.

Online Grades: I will put your grades online on Canvas. I do my best to update the grades on a regular basis and keep everything accurate. However, I would advise you to check your grades often to make sure there were no data entry mistakes. I'm always happy to correct any mistakes I've made. You just need to let me know about them. You may also request a regrade of homework and quizzes through Gradescope.

Lecture Videos: 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/>

Calculators: Calculators will not be allowed on exams. They may be used on homework, but you should still write out the details of your computation. It is in your best interest not to become too dependent on your calculator since they will not be allowed on exams.

Technical requirements:

1. Students are expected to be computer literate and Canvas and Zoom navigation skills are expected. Knowledge and navigation of Canvas and Zoom is critical to access all features and resources of this course. To keep this course as interactive as possible you should log in to all Zoom meetings with audio and video enabled.
2. Because this class will be delivered synchronously a strong internet connection and adequate bandwidth is required.
3. To participate and take exams in this course you will need to have a reliable webcam and microphone. You will also need a reliable scanner although many phones have this capability, however, you will need to be able to scan and keep your video on at the same time so make sure they are not the same device.
4. For technical assistance, review the [Canvas Getting Started Guide for Students](#) and/or contact TLT, Knowledge Commons, etc.

Expectations for Online Learning Environment:

Classroom equivalency: Respectful participation in all aspects of the course will make our time together productive and engaging. Zoom lectures, discussion threads, emails and canvas are all considered equivalent to classrooms and student behavior within those environments shall conform to the student code.

Specifically:

- Posting photos or comments that would be off-topic in a classroom are still off-topic in an online posting.
- Disrespectful language and photos are never appropriate.
- Using angry or abusive language is not acceptable, and will be dealt with according to the Student Code. The instructor may remove online postings that are inappropriate.
- Do not use ALL CAPS, except for titles, or overuse certain punctuation marks such as exclamation points and question marks.
- Course e-mails, e-journals, and other online course communications are part of the classroom and as such, are University property and subject to the Student Code. Privacy regarding these communications between correspondents must not be assumed and should be mutually agreed upon in advance, in writing.
- Other expectations for online communication (on Discussion Board, Emails, Zoom chat etc):
 - Emails: When emailing your Instructor and Teaching Team keep a

professional tone (e.g. Use a descriptive subject line and sign your message with your name and return e-mail address. Please consult this page for tips on how to write appropriate professional emails:

<https://academicpositions.com/career-advice/how-to-email-a-professor>

- Treat your instructor, teaching team and classmates with respect in email or any other communication.
- Remember that all college level communication should have correct spelling and grammar (this includes discussion boards).
- Avoid slang terms such as “wassup?” and texting abbreviations such as “u” instead of “you.” Additionally, while emojis can be fun, they are not appropriate in an academic context.
- Be cautious when using humor or sarcasm as tone is sometimes lost in an email or discussion post and your message might be taken seriously or be offensive to others.
- Be careful with personal information (both yours and others).
- Electronic or equipment failure: It is your responsibility to maintain your computer and related equipment in order to participate in the online portion of the course. Equipment failures will not be an acceptable excuse for late or absent assignments.
- Online submissions: You are responsible for submitting the assignment with the required naming convention, correct file extension, and using the software type and version required for the assignment.
- Canvas allows students to change the name that is displayed AND allows them to add their pronouns to their Canvas name. Additionally, students can indicate their pronouns in Zoom. I will often address individual students based on this information so if they are incorrect, I may need to be corrected.

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.

Additional Policies:

- I reserve the right to change my policies stated in this syllabus at any point in the semester. If I do make a change to a policy, I will announce it in class and send the change in email.
- There will be no retakes of exams, for any reason. If you have an emergent, extenuating circumstance that makes it necessary to take an alternate exam, it is your responsibility to discuss that with me, before the exam occurs, or as soon as possible. In general, I allow exams to be taken early, but not late.
- I will post announcements to the class in Canvas and will hold you accountable for receiving that information. Be sure to turn on your notifications in Canvas so you are alerted to announcements I make in Canvas as well as grade changes, discussion posts, etc.

- If you have questions about any exam/assignment grade, or you want to appeal the grading of the exam/assignment, you must turn it in to me within one week of the exam/assignment being graded. I'm happy to look over your appeal and/or questions and give my feedback in order to benefit your learning. But it must be done in this timeframe of a week from when I grade the exam/assignment.
- If you cheat on any homework, quiz or exam, I will automatically give you a zero for that grade. Depending on the severity of the cheating, I may decide to fail you from the class. Also, if you exhibit any other behaviors that are unethical, like offering me a bribe to give you a better grade (even if you later claim you were joking), I will report your behavior to the Dean of Students. Note academic honesty includes sharing content digitally such as exams, quiz solutions, or other material that would normally not be shared physically.

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. 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

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.

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.

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. You 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, collusion, fraud, theft, etc. Students should read the Code carefully and know you are responsible for the content. According to Faculty Rules and Regulations, it is the faculty responsibility to enforce responsible classroom behaviors, 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>