

MATH 2210-001 Calculus III, Summer 2021

Class Meetings: Lecture: M W F/ 02:00 pm-03:00 pm through Zoom to follow the lecture starting on Monday, May 17 ending on Wednesday, August 4

Holidays: May 31st M (Memorial Day), July 5th M (Independence Day), July 23rd F (Pioneer Day)

Other Important Dates: See <https://registrar.utah.edu/academic-calendars/summer2021.php>

- May 21st (F): Last day to add without a permission code, Last day to wait list
- May 26th (W): Last Day to Add,Drop(Delete),Elect CR/NC,or Audit Classes
- June 25th (F): Last Day to Withdraw from classes

Course Type: IVC (Interacting Video Classes, also called synchronous online)

Instructor: Dr. Sung Chan Choi

Email: choi@math.utah.edu

Office Hours: 3:00-4:00pm on M and W

Text: *Calculus with Differential Equations*, by Varberg, Purcell, and Rigdon (9th edition)

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 course.

Prerequisite Information: “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.

Canvas: Canvas will be used for posting course announcements, homework assignments, grades, files and any relevant supplementary material. You are also welcome to make use of the Canvas discussion board to discuss course problems or topics. You can access the Canvas page through CIS or by logging in at utah.instructure.com. Students should check the Canvas page regularly for course information and resources. Email notifications and correspondence will be sent to the student’s UMail address ([\[u-number\]@utah.edu](mailto:[u-number]@utah.edu)); this email account must be checked regularly.

Grading: The following are the grade components and the percentage each contributes to a student’s final grade:

- **Webwork Homework Assignments (15%)**- Homework is done online through Canvas. (We use the Webwork.) Late homework is, in general, not accepted.
- **Daily Quizzes (20%)**- The quizzes are given by chat on your zoom at 2:50 pm every class and proctored through zoom during the quiz. For the quizzes you will need a camera (web cam or phone/tablet cam) and a separate device for scanning. You will be given 10 minutes until submitting on Gradescope. You will be scanning all your work in a single pdf file and submit it to Gradescope. The topic of the quiz will be given from the previous class. I will post the study guide for quizzes on “Files” in CANVAS. You must check your CANVAS frequently. You are not allowed to use any computer or online resources (including math sites and online calculators) or to communicate about the quiz with other peers. Not following these rules is considered academic misconduct and will be penalized as such. If you are **absent** from a class, you **cannot take** the quiz. Make-up quizzes are **not allowed**. However, the **lowest 6 quiz scores** will be dropped at the end of the semester. Since it is worth 20% of your grade, it may damage your grade if you ignore quizzes.
- **Midterm Exams (40%, 20% each)**- Two 60-minute midterm exams will be given on select Fridays. You will have the whole class period to complete the exam. A practice exam will be posted a week

prior to the midterm that will cover the same material. Dates of the midterm exams will be **Friday, June 18th and Friday, July 16th** in Zoom.

- **Final Exam (25%)**- A two-hour comprehensive exam will be given. As with the midterms, a practice final will be posted a week prior. Our final exam is scheduled for **Thursday, August 5th, 2021 from 12:30-02:30 pm** in Zoom.
- **Important note:**
 - Students with university excused absences (band, debate, student government, intercollegiate athletics) should make alternate arrangements with me as soon as possible if the absence interferes with any course components.
 - You are NOT allowed to seek help from others, including online resources such as Chegg or Stack Exchange during quizzes and exams. Soliciting help from such sites will be considered as academic misconduct and will be dealt with accordingly.
 - It is the student's responsibility to ensure the accuracy of all recorded homework, quizzes, online assignments, and exam grades. Also you should keep as record all your graded assignments. If you see any error in your grades on Canvas, reach out to the instructor as soon as possible, or at the latest within two weeks from when the assignment was returned.

Grading Scale: Final course letter grades will be determined as follows:

[93, 100]	A	[73, 77)	C
[90, 93)	A-	[70, 73)	C-
[87, 90)	B+	[67, 70)	D+
[83, 87)	B	[63, 67)	D
[80, 83)	B-	[60, 63)	D-
[77, 80)	C+	[0, 60)	E

Additional Resources

- **Free Online Tutoring** - See <http://www.math.utah.edu/undergraduate/mathcenter.php>
- **Departmental 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/math2210.php>

Calculators: Calculators will **not be allowed on quizzes and exams**. They may be used on homework.

Expected Learning Outcomes: Upon successful completion of this course, a student should 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.

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 and 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>

ADA Statement: 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, 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 Names and Personal Pronouns: Class rosters are provided to the instructor with the students 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.

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.

Safety Statement: 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 <https://safeu.utah.edu/>.

Course Roadmap Week-by-Week: Below is an outline of the sections and topic covered in this course. Optional sections are marked with an *.

Week 1 Introduction, Chapters 10.4, 11.1-11.3

Week 2 Chapters 11.4-11.7* **Note, Wednesday, May 26th is the last day to drop**

Week 3 Chapters 11.8-11.9, 12.1-12.2

Week 4 Chapters 12.3-12.6

Week 5 Chapters 12.7, **Exam 1 (Friday, June 18th)**

Week 6 Chapters 12.8-12.9, 13.1 **Note, Friday, June 25th is the last day to withdraw**

Week 7 Chapter 13.2-13.4

Week 8 Chapters 13.5*-13.7

Week 9 Chapters 13.8, **Exam 2 (Friday, July 16th)**

Week 10 Chapters 13.9, 14.1-14.2

Week 11 Chapters 14.3-14.6

Week 12 Chapter 14.7, **Final Exam Thursday, August 5th from 12:30 pm-02:30 pm**

Disclaimer: 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.