Mathematics 2210  
Spring 2020

Instructor: Emily Smith  
(she/her)

Class Time and Place:  
2:00 to 2:50 PM  
Mondays, Wednesdays, Fridays  
in LCB 225

Office Hours:  
2:00 to 3:00 PM, Tuesdays  
1:00 to 2:00 PM, Thursdays,  
or you can ask quick questions after class,  
or you can set up appointments.

Office Location:  
JWB 331

E-mail address:  
msmith@math.utah.edu  
If you need to contact me for any reason, please send me an E-mail or contact me through Canvas.

Class Web Page:  
I will use the Canvas page to upload assignments and make announcements.  
You can get there easily from the main University of Utah website www.utah.edu. To log in, you use the same student ID and password that you use for Campus Information Systems.

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/  

Important Dates:  
For the full University schedule, which is subject to change, visit https://registrar.utah.edu/academic-calendars/spring2020.php

First day of class: Monday, January 6th  
Last day to Add without a permission code: Friday, January 10th  
Add and Drop deadline: Friday, January 17th  
Withdrawal deadline: Friday, March 6th  
University Holidays: Monday, September 2nd; October 6th -13th; November 28th – December 1st  
Midterm Exam dates: Thursday, September 26th; Thursday, November 14th  
Last day of classes: Tuesday, April 21st  
Reading Day: Wednesday, April 22nd  
Final Exam date: Thursday, April 23rd, 1:00 PM to 3:00 PM

Course Information: Math 2210 Calculus III is a 3 credit 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.

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.

Grading: The grades will be calculated as follows:

- **Homework:** 10%
- **Quizzes:** 15%
- **Midterm Exams:** 45%
- **Final Exam:** 30%

Homework: Homework will be assigned weekly. Typically, homework will be due on Wednesdays in class. Homework will be largely based on material covered in class recently. Your homework will be graded largely on completion and partially on correctness.

I have the following policies for submitting homework:
- **Homework is due at the weekly deadline.** I will typically not give exceptions or extensions to homework deadlines. If you know in advance that you will not be able to turn in your homework for the week, let me know and I can try to accommodate you.
● Homework must be stapled or securely fastened. Repeated offenses may result in a homework score of zero for that assignment.
● The lowest two homework scores will be dropped. This will cover most circumstances related to missed homework throughout the semester.

Quizzes:

Around once a week I will hand out a short quiz to be done in small groups. Typically, quizzes will be handed out on Fridays in class. While you will work in groups, everyone needs to submit their own quiz for grading.

Your lowest two quiz scores will be dropped to accommodate for any circumstances.

Midterm Exams:

We will have two midterm exams, each weighted equally (so 22.5% of the total grade). The exams will be on the following days:

● Exam 1: Friday, February 14th
● Exam 2: Friday, March 27th

These exams will be at the usual time and place for the course. If you are not able to take an exam, you will receive a score of zero.

Please let me know in advance if you will not be able to take one of the exams on the scheduled date so I can try to accommodate you. You will need to take the exam before the scheduled date.

Final Exam:

The final exam for this class is comprehensive and will occur during the scheduled period determined by the registrar.

Thursday, April 23rd, 1:00 PM to 3:00 PM

If you are not able to take the final exam, you will receive a score of zero. You should plan your schedule and Summer break with this date in mind.

Please let me know at least two weeks in advance (by Friday, April 10th) if you will not be able to take the final exam on the scheduled date so I can try to accommodate you.

Calculators:

Calculators are not permitted on exams.

You may find it helpful to use calculators for your own personal use, but you must write details for all calculations on homework. Since calculators are not permitted on exams, I recommend not relying on them for homework.

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/

Online Grades:

I will put your grades online on Canvas. I would advise you to check your
grades often to make sure there were no data entry mistakes. I am always happy to correct any mistakes I have made, you just need to let me know about them.

**Grading Scale:**
The final grade scale will be the following:
A (90-100), A- (87-89), B+ (84-86), B (75-83), B- (72-74), C+ (69-71), C (60-68), C- (57-59), D+ (54-56), D (45-53), D- (42-44), E (0-41).

The instructor retains the right to modify this grading scheme during the course of the semester; students will, of course, be well notified of any adjustments.

If I do need to curve the grades, I will simply shift everything down by a few points (whatever is necessary).

**Tutoring Center:**
T. Benny Rushing Mathematics Student Center (adjacent to JWB and LCB), Room 155
M - Th 8 a.m. - 8 p.m.
F 8 a.m. - 6 p.m.
(opens Wednesday) (closed Saturdays, Sundays and holidays)
They are also offering group tutoring sessions. If you're interested, inquire at the Tutoring Lab.
http://www.math.utah.edu/ugrad/tutoring.html

**Private Tutoring:**
University Tutoring Services, 330 SSB (they offer inexpensive tutoring). There is also a list of tutors at the Math Department office in JWB233.

**Computer Lab:**
Also in the T. Benny Rushing Mathematics Student Center, Room 155C.
M - Th 8 a.m. - 8 p.m.
F 8 a.m.- 6 p.m.
Link to computer lab:
http://www.math.utah.edu/ugrad/lab.html

**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 and Access (CDA), 162 Olpin Union Building, 581- 5020 (V/TDD). CDA will work with you and me to make arrangements for accommodations. All information in this course can be made available in alternative format with prior notification to CDA.

**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 dismisal 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

**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 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 pronouns will be respected. If you need assistance getting your preferred name on your U-ID card, 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 safeu.utah.edu.

**Additional Policies:**

This syllabus is not a binding legal contract. It may be modified by the instructor when the student is given reasonable notice of the modification.