Math 2210-03: Calculus III 11:50 - 12:40 MWF CSC 208
Marcus Robinson (robinson@math.utah.edu)

**Contacting Me:** If at any point throughout the semester you have a question or concern please do not hesitate to contact me. Your best chance of reaching me in a timely fashion is to email me.

**Office Hours:** Office hours will be held in JWB 219. Monday 12:45 - 1:45 pm and Tuesday 12:00 - 1:00 pm. I am happy to meet with you outside of these times schedule permitting.

**Textbook:** Calculus with Differential Equations, 9th edition, by Varberg, Purcell and Rigdon. ISBN: 0-13-230633-6

**Course Prerequisites:** At least a C grade in Math 1220 or Math 1250 or Math 1320, or AP Calculus BC score of at least 4 (within the last two years).

**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. This is a 3-credit 1-semester course.

By the end of the course, a student should be able to:

- Compute dot and cross products of two vectors, projection of one vector onto another vector.
- Convert between cylindrical, rectangular and spherical coordinates. Understand when it’s prudent to switch to one coordinate system over another in computing an integral.
- Determine the equation of a plane in 3-d, including a tangent plane to a surface in 3-d.
- Find the parametric equations of a line in 3-d.
- Perform calculus operations on functions of several variables, including limits, partial derivatives, directional derivatives, and gradients; understand what the gradient means geometrically.
- Find maxima and minima of a function of two variables; use Lagrange Multipliers for constrained optimization problems.
- Understand divergence and curl of a vector field.
- 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.
- Compute line and surface integrals.
- Determine if a vector field is conservative and if so, find the corresponding potential function.
- Use and understand Green’s Theorem, Gauss’ Divergence Theorem and Stokes’ Theorem.

**Homework:** Problems from the textbook will be assigned weekly and due on Wednesday. You will be expected to turn in a written copy of homework by the end of class either to me or to my office. I will accept one late assignment throughout the semester. Homework will be graded based on both completion and correctness but I care much more about how you arrived at an answer rather than the answer itself.

**Quizzes:** Quizzes will be given weekly on Friday. The problems on the quizzes will be similar to the assigned homework questions. *No make-up quizzes will be given*, but your two lowest scores will be dropped at the end of the semester.

**Midterms:** There will be two 50 minute exams given in class. Absence from an exam will be excused only if you can provide verifiable and convincing evidence that you have a significant illness or serious family crisis that will prevent you from attending. Except under extremely unusual circumstances, you must inform me in advance of the missed test. You are expected to promptly make arrangements with me to make up the test.

**Final Exam:** There will be a comprehensive final exam.
Grading: Your grade will be based on

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<th>Component</th>
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<tr>
<td>Homework</td>
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<td>Quizzes</td>
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<td>Midterms</td>
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<td>Final Exam</td>
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Your final letter grade will be determined by your overall percentage as follows:

- A 93% - 100%
- A- 90% - 92.9%
- B+ 87% - 89.9%
- B 83% - 86.9%
- B- 80% - 82.9%
- C+ 77% - 79.9%
- C 73% - 76.9%
- C- 70% - 72.9%
- D+ 67% - 69.9%
- D 63% - 66.9%
- D- 60% - 62.9%
- E below 60%

Calculators: You may find it helpful to have a graphing calculator for your own personal use. However, if I allow calculators on exams or quizzes, I will only allow scientific calculators (no graphing or programmable calculators will be allowed ever). Most of the time, you will not have use of a calculator on quizzes. You will be given advanced notice of the calculator policy for specific quizzes and exams.

Tutoring: The Rushing Math Center offers free drop-in tutoring, a computer lab, and study areas for undergraduates. The Rushing Student Center is adjacent to LCB and JWB. The hours for the Fall/Spring semester are: 8 am - 8 pm Monday - Thursday and 8 am - 6 pm on Friday. The tutoring center will open the second week of classes.

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/

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.

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

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.

Class Policies:

- I reserve the right to modify the class structure and syllabus at any time but I will notify you if and when any changes are made.
- If an emergency arises that prevents your from making it to an exam or turning in a homework it is your responsibility to communicate that information to me as soon as possible. I will do my best to accommodate any situation that comes up.
- If you are struggling with a concept please come talk to me or visit the tutoring center as soon as possible.
- I encourage you to work with others on the homework but anything that you turn in must be your own work.
- Regrade requests can only be made the class after the homework/quiz/exam was returned and in writing with an explanation why more credit is due.