

Mathematics 2210

Summer, 2018

- Instructor:** Kelly A. MacArthur
- Class Time and Place:** 9:30 a.m. - 1:00 p.m.
Mondays, Tuesdays, Wednesdays, Thursdays, and Fridays
in JFB 102
- Office Hours:** Monday-Friday, 8:50-9:20 a.m., or by appointment
- Office Location:** JWB 218
- E-mail address:** macarthur@math.utah.edu
- Class Web Page:** <http://www.math.utah.edu/~macarthu> (go to Current Teaching and our class)
- Text:**
- (1) *Calculus with Differential Equations*, 9th edition, by Varberg, Purcell and Rigdon. ISBN: 0-13-230633-6
 - (2) My class notes which are already posted on my website. You will need to print those out and bring them to class, because I'll refer to them regularly. (Please note: You can print them in the Math Computer Lab for no cost.)
- Course Information:** Math2210, Calculus 3 is a 3-credit semester course.
- Prerequisite:** At least a C grade in Math1220 or Math1250 or Math1320, or AP Calculus BC score of at least 4 (within the last two years)
Important Note: The mathematics department DOES enforce prerequisites for all our undergraduate courses. If you were able to register for this class based on your enrollment in the prerequisite course last semester, and you did not receive the minimum grade in that course to continue on with your math classes, then you will be dropped from this class on Friday of the first week of classes. If that is the case for you, then it is in your best interest to drop yourself from this class before you are forcibly dropped and get into a class for which you have the prerequisites.
- 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, 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.
 - 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.
- 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.

Tutoring Lab: 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. - 4 p.m.
 (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 is <http://www.math.utah.edu/ugrad/lab.html>

Grading: The grades will be calculated as follows:
 Daily Quizzes 20%
 Midterm 20%
 Midterm 20%
 Midterm 10%
 Final Exam 30%
(Note: There will be 3 midterms. Your lowest midterm score will count for 10% of your grade and your top two midterm scores will each count for 20% of your final grade.)

Homework: There are homework problems assigned for each section of the book that we cover. You can access that list of problems at my website. It is important to do the homework problems even though I will not collect the homework. If you don't do the homework for practice, it is highly unlikely that you will pass the daily quizzes and exams. Practice makes perfect...or at least it makes you head in the direction of perfect. :) Observing someone else do the problems is VERY different from working the problems yourself!!

- Quizzes:** There will be a total of 13 quizzes. Basically, there will be a 20-minute quiz every Monday, Tuesday, Wednesday and Thursday, with the exception of any school holidays. The daily quiz will cover the material presented the previous day in class. Quiz questions will be taken from text examples, class examples, assigned problems or problems very much like those problems. **I will drop your lowest three quiz scores.**
- Midterms:** There will be a midterm every Friday for the first three weeks of class. I will announce in class every Thursday exactly which sections will be covered on the midterm.
- Final Exam:** The final exam for this class is comprehensive and it will occur on the Thursday of the last week of class. I will give you three hours to complete the exam, to build in an additional hour, in case you need it. The exam will cover all the material covered in the class.
- Online Grades:** I will put your grades online on Canvas. 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 System. 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.
- 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 exams and quizzes. This will be discussed more in class with each quiz and test.
- 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), B+ (87-89), B (83-86), B- (80-82), C+ (77-79), C (73-76), C- (70-72), D+ (67-69), D (63-66), D- (60-62), E (0-59).
If I do need to curve the grades, I will simply shift everything down by a few points (whatever is necessary).
- 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 (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 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>

Teaching Philosophy: I believe strongly that mathematics, at its core, is the art/experience/science of problem solving and pattern recognition. It is inherently a creative process, one to be struggled with, repeated, and enjoyed. The process requires imagination, persistence, courage, processing time, and ultimately produces experiential, mathematical skill. It is from this perspective that I teach. I'm not as concerned with the destination, i.e. the answer, as I am about the journey of problem-solving and mathematical exploration since it is exactly the entirety of the journey that creates the answer. And, self-confidence and mastery are then natural by-products of the mathematical journey.

Classroom Social Equity: I strive to be ethical, kind, fair, inclusive and respectful in my classroom and expect students to behave likewise. In this regard, I have these requests of you, my student:

1. 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 homeworks, exams, quizzes, 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.
2. Please do tell me, discreetly, if you have any sort of anxiety disorder, TBI, PTSD, C-PTSD, or any other challenge that would cause psychological harm to you by me calling on you in class. I want students to feel a little uncomfortable and stretched during class, while working on problems as a large group, but I definitely don't want to cause any human being harm. So, please just tell me if that is the case for you and I will confidentially accommodate your request.
3. If your preferred name is different than your legal first name (*the preferred name you chose does indeed show up in CIS on my roll sheet, but not yet in Canvas*), please log into Canvas and go to Account (on far left)-->Settings and change your Display Name to be the name you prefer to be addressed by. This will help me greatly to know students' names, and to address you correctly when responding to Canvas quiz comments.

Additional Policies: Due to experience, I have decided to make some additional policies regarding my classroom administration and grading.

- I do NOT allow the use of laptop computers in my classroom, in order to minimize student distractions. At this point, it's almost impossible to take notes for a math class on a laptop in real time. Thus, it is unnecessary in class. If you are using a tablet or ipad or some similar device to take notes and the screen lies parallel to your desk, that is totally fine.
- There will be no retakes of exams, for any reason.
- You may take an alternate exam if you talk to me about it first and explain the emergent, extenuating circumstances that make it necessary. It is 100% your responsibility to communicate with me as soon as is possible, before the exam occurs (or as soon as possible). Talking to me *after* the problem will be sufficient reason for me to allow you to get a zero on that test. I reserve the right to make alternate exams more difficult than the scheduled exam and I only give alternate exams EARLY, never late.
- I will kindly demand respectful behavior in my classroom. Examples of disrespect include, but are not limited to, reading a newspaper or magazine in class, social chatting with your friend in class, text-messaging during class, excessive use of your cell phone, or cuddling with your girl/boyfriend in class. If you choose to be disrespectful with distracting behavior during our class, please keep in mind that you put me in a position of choosing between protecting/taking a stand for you OR for the other students or myself whom you are disrupting. I can guarantee I will choose to stand for the students who are there to learn without disruptions and I will thus take action to terminate your distracting behavior, and that action may not be desirable for you.
- There will be no cursing nor negative ranting (for example, “math sucks”) on any written work turned in. The penalty for such things on your written work will be a zero score on that assignment or test.
- I would advise you to set your notifications in Canvas so you are always up-to-date with information on Canvas. I will post weekly announcements in Canvas and I will hold you accountable for the information contained in those announcements.
- If you have crisis-level extenuating circumstances which affect your class performance and you need guidance/advice/flexibility, it is completely your responsibility to communicate with me as soon as possible so I can help you in some manner, which I'm truly happy to do. The longer you wait to communicate with me, the less I can and am willing to do to help.
- If you have questions about any exam/quiz/homework grade, or you want to appeal the grading of the exam/quiz/homework, you must bring it to me within one week of when the exam/quiz/homework was handed back in class. 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 hand back the exam/quiz/homework.
- I keep all the grades in Canvas. There are rare occasions when I or one of my graders makes a data entry error, an arithmetic error or some other unintentional mistake in Canvas grades. Please take responsibility to check your grades in Canvas often and report any mistakes to me as soon as you see them. I'm happy to fix them immediately! Additionally, please keep all written work returned to you, including homeworks, tests, quizzes, etc. If there is some mistake in Canvas, I will need your written work to fix the error. It is your responsibility as a student to keep that written work.

- Please make sure you do your best throughout the semester, knowing the grading scheme and what's expected of you, and come talk to me if you need further study strategies. I will be happy to brainstorm ideas to help you maximize your study strategies and improve your mathematical understanding. I will offer an extra credit opportunity on every midterm and final exam, to help make up for arithmetic mistakes. But, I will not offer any additional extra credit at the end of the semester or any other way for you to improve your grade at that time. No exceptions. Please respect this and do not ask for special favors or extra credit when you realize you don't like your grade. Emails at the end of the semester (or anytime really) asking to change your grade or offer you late options of extra credit are disrespectful, in my opinion, and unethical. I will either NOT respond to your email or I will forward your email request to the Dean of Students office for them to meet with you and counsel you on appropriate student behavior.
- If you cheat on any homework, project, 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. Please note that the use (or even just pulling it out of your pocket) of a cell phone or any other electronic device is considered cheating and cause for receiving an automatic zero on any in-class exam. 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.

I reserve the right to change my policies stated in this syllabus at some 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 or post an Announcement on Canvas.