Mathematics 2210

Spring, 2015

Instructor:	Kelly A. MacArthur
Class Time and Place:	8:35 a.m. - 9:25 a.m. Mondays, Wednesdays, and Fridays in WEB L103
Office Hours:	Mondays 7:30 – 8:30 a.m., Wednesdays 11:00 a.m.– 12:00 p.m., or by appointment
Office Location:	JWB226
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 will be posted on my website (possibly per day or possibly by week). 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. - 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 is http://www.math.utah.edu/ugrad/lab.html

Grading: The grades will be calculated as follows:
Daily Quizzes   10%
Weekly Quizzes 15%
Midterm 20%
Midterm 20%
Midterm 10%
Final Exam 25%
(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!!

Daily Quizzes: There will be a five-minute quiz on Canvas that opens every Monday, Wednesday and Friday morning, including exam weeks (but not exam days). You will need to complete that online quiz on your time, outside of class hours. Each daily quiz will be one or two questions about the material covered in class/video lecture that day. If you are keeping up with the work, these quizzes should be reasonably straight forward. There will be a total of about 33 of these quizzes. I will drop the lowest six scores.

Weekly Quizzes: There will be a total of 11 weekly take-home quizzes, given out on Fridays (except for exam days) and due on Monday mornings, before class starts. The weekly quiz will cover the material presented that week in class. Quiz questions will be taken from text examples, class examples, assigned problems or problems very much like those problems. The take-home quizzes will be harder than the daily quizzes, testing more of your big-picture learning than just one problem. The take-home quizzes will have roughly four to five questions per week. **I will drop your lowest two quiz scores**. IMPORTANT NOTE: You must pick up the take-home quiz in class on Friday. This is the only way to get the quiz as I will not email it or provide it to you in any other fashion. If you cannot be there to receive the quiz, then I suggest you have a classmate/friend pick it up for you. Also, the quizzes will be collected at the beginning of class on Mondays; no late quizzes will be accepted for any reason.

Midterms: There will be three one-hour midterm exams throughout the semester, and the dates will be fixed, according to the course outline/schedule that is on our class web page. They will be during normal class time, in our usual classroom.

Final Exam: The final exam for this class is comprehensive and it will occur on Thursday, April 30th, from 8:00 to 10:00 a.m. It's highly likely that I'll reserve our classroom starting at 7:00 a.m. that day, in case you would like some extra time for the final exam.

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. This will be discussed more in class.

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 Services (CDS), 162 Olpin Union Building, 581-5020 (V/TDD). CDS 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 CDS.

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.

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. 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.

- I will 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 your buddies during class or cuddling with your girl/boyfriend in class. If you choose to be disrespectful with distracting behavior during my class, I can guarantee I will take action to terminate your disruptive 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.

- You need to have a valid email address registered with Campus Information System. I will regularly send emails to the class and will hold you accountable for receiving that information. If you have troubles receiving my weekly emails, you can (1) check to make sure your email address at Campus Information System is correct, (2) make sure my emails are not going directly to your junk mail folder, or (3) contact the webmaster at Campus Information System.

- If you have crisis-level extenuating circumstances which require flexibility, it is completely your responsibility to communicate with me as soon as possible so I can help you in some manner. 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 the exam. 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.

- 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 question 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. Most likely, I just won't respond to such emails or questions in person.

- 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 internet device is considered cheating and cause for receiving an automatic zero on any quiz or 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.