

Mathematics 6100

Summer, 2015

- Instructor:** Kelly A. MacArthur
- Class Time and Place:** 2:00 p.m. - 6:00 p.m.
Mondays, Tuesdays, Wednesdays, and Thursdays
in LCB121
- Office Hours:** Monday-Friday, 9:00 – 9:30 a.m., or I'm happy to stay after class, or you can email me to make an 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:** *Calculus Connections, Mathematics for Middle School Teachers*, by Harcharras and Mitrea, published by Pearson. ISBN: 0-13-144923-0
- Course Information:** Math6100, Concepts of Calculus is a 3-credit semester course.
- Prerequisite:** At least a C grade in Math5150 and Math5160.
- Course Description:** In this course, the students will develop conceptual understanding of calculus as it is needed for successful teaching of secondary curriculum. The students will learn how the ideas of calculus are rooted in other topics encountered in middle and high school. The topics covered will include concepts of differential and integral calculus, computations of derivatives and integrals as well as their applications.
- Expected Learning Outcomes:** Upon successful completion of this course, a student should be able to:
- Discover and understand underlying principles of calculus through discussion and connection to the classroom.
 - Compute/understand/explain the underlying concepts of calculus, which include:
 - Limits and continuity of functions
 - Derivative as a rate of change
 - Analyzing/sketching graphs of functions using calculus techniques
 - Integrals as antiderivatives
 - Geometric applications of the definite integral

- 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.
(opens Wednesday) (closed Saturdays, Sundays and holidays)
- 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.- 4 p.m.
Link to computer lab is <http://www.math.utah.edu/ugrad/lab.html>
- Grading:** The grades will be calculated as follows:
Daily Homework 15%
Daily Quizzes 40%
Project 20%
Final Exam 25%
- Homework:** There are homework problems assigned for each section of the book that we cover. You can access that list of problems at the class website. It is necessary to do the homework in order to be properly prepared for the daily quizzes and final exam. 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 11 quizzes. Basically, there will be a 30-minute quiz every Monday, Tuesday, Wednesday, and Thursday, with the exception of the last day of class, when there will be the final exam. 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 two quiz scores.**
- Final Exam:** The final exam for this class is comprehensive and it will occur on the last Thursday of the 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. 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 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.