

Mathematics 1220

For both sections 03 (taught at 9:40) and 05 (taught at 11:50)

Fall, 2018

Instructor: Kelly A. MacArthur

Class Time and Place:

<u>Section 03 (9:40 class):</u> 9:40-10:30 am Mondays, Tuesdays, Wednesdays, and Thursdays in JFB 103	<u>Section 05 (11:50 class):</u> 11:50 am-12:40 pm Mondays, Tuesdays, Wednesdays, Fridays in WEB L110
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Office Hours: Thursdays 8:30 - 9:30 a.m., Fridays 2:00-3:00 pm, or by appointment.

Weekly Review Sessions: Fridays, 9:40-10:30 am, in JTB 110
Saturdays, 10:00 am-1:00 pm, in M LI 1725

Exam Review Sessions: Wednesday, 9/12, 6:00-9:00 pm, in M LI 1725
Wednesday, 10/17, 6:00-9:00 pm, in M LI 1725
Wednesday, 11/14, 6:00-9:00 pm, in M LI 1725
Monday, 12/10, 11:00 am-1:00 pm (location TBA)
Tuesday, 12/11, 2:00-4:00 pm (location TBA)

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
Please go to <http://www.math.utah.edu/schedule/bookInfo/index.html> and
look at the Book Purchasing Information document for
Math1210/1220/2210 to get the best deals.

(2) My class notes which will be posted on the class web page. 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: Math1220, Calculus 2 is a 4-credit semester course.

Course Description: Geometric applications of the integral, logarithmic, and exponential functions, techniques of integration, conic sections, improper integrals, numerical approximation techniques, infinite series and power series expansions, differential equations (continued).

Prerequisite: At least a C grade in Math1210 or Math1250 or Math1270 or Math1310, or AP Calculus AB score of at least 4 or AP Calculus BC score of at least 3 (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.

Expected Learning Outcomes:

Upon successful completion of this course, a student should be able to:

- Compute derivatives and integrals for exponential, logarithmic, hyperbolic functions, and inverse trigonometric functions.
- Integrate integrable functions using integration by parts, u-substitution, trigonometric substitutions, rationalizing substitutions, partial fraction decomposition, and trigonometric identities. This includes knowing which techniques to apply to a given integral.
- Use L'Hopital's Rule to calculate indeterminate-type limits and also know what limits are the non-indeterminate forms and how to compute those limits.
- Compute improper integrals.
- Understand the difference between an infinite sequence and infinite series and determine if a sequence converges or diverges.
- Determine whether or not an infinite series of numbers converges or diverges using a variety of tests.
- Understand what it means for a Power Series to converge or diverge and be able to find the Taylor Series for a given function.
- Differentiate and integrate functions in polar coordinates.

Tutoring Lab: T. Benny Rushing Mathematics Student Center (adjacent to JWB and LCB), Room 155
M - Th 8 a.m. - 8 p.m. and 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. and 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 Assignments 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.)

Suggested Homework:

There are suggested homework problems assigned for each section of the book that we cover. You can access that list of problems at our class web page. 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!!

Canvas Daily Quizzes:

There will be a 30-minute quiz on Canvas that opens every Monday, Tuesday, and Wednesday morning within 90 minutes of class ending that day and closes the next day before class, including exam weeks. You will need to complete that online quiz on your time, outside of class hours, every Monday, Tuesday and Wednesday. Each daily quiz will be one to four questions about the material covered in class/video lecture that day. If you are keeping up with the work, these quizzes are intended to be reasonably straight forward. There will be a total of about 40 of these quizzes. You can get some or all the points back on these quizzes (if you miss points) by following the very specific instructions on the "How to Request Partial Credit for Canvas Daily Quizzes" document that's linked from the public class web page. **I will drop the lowest eight scores.**

Weekly Assignments:

There will be a total of 11 or 12 weekly assignments, posted on Canvas (in the Files tab, under the folder Weekly Assignments) by Wednesdays of each non-test week and due on Monday mornings, at the beginning of class. The weekly assignment will cover the material presented that week in class. Questions will be similar to text examples, class examples, assigned problems or harder conceptual problems. The weekly assignments will be much harder than the daily quizzes, assessing more of your big-picture learning than just one problem. **I will drop your lowest two assignment scores.**

Additionally, the weekly assignment is due at the beginning of class on the first class day of the week. By five minutes after class starts every Monday (or first class day of the week), I will put the assignments in my backpack and then any assignments turned in during class after that will be counted as "late." Each student will be allowed to turn in only two late assignments per semester. The late assignments can only be turned in up to 5:00 pm by the day it's due. No

electronic versions of the homework will be accepted. If you need to turn in your late assignment after class on the day it's due, you can slide it under my office door in JWB 218 by 5:00 pm. Any assignment turned in after 5:00 pm on the day it's due will not be graded and will be recorded as a zero grade in Canvas. After you've used up your two late assignments, there will be no further late assignments accepted, under any circumstances. Absolutely no exceptions. I will be consistently strict (and thereby fair) about this policy.

IMPORTANT NOTE: You must print the weekly assignment, from Canvas, double-sided on one piece of white paper (unless you have some compelling reason that doing the work on a double-sided sheet of paper causes you an actual hardship, in which case you need to get permission from me about how to proceed). Your work needs to be written on that piece of paper. We will not grade anything on any other piece of paper, so do NOT staple your scratch work or other work to the quiz. The only work that will be graded is the work written directly onto the double-sided one sheet of paper that is the weekly assignment. I cannot stress this fact enough. You are fully responsible for knowing and adhering to these policies.

Midterm Exams: There will be three midterm exams throughout the semester, and the dates are fixed, according to the course outline that is on our class web page. They will be during normal class time, in our usual classroom, split between two class periods to accommodate a group portion and solo portion of each exam. Groups will be assigned semi-randomly by me, and put in the People tab in Canvas at least a week before the exam.

Final Exam: The final exam for this class is comprehensive and it will occur as follows.

<u>Section 03 (9:40 class):</u> Wednesday, December 12 th , from 8:00 to 10:00 am <i>in our usual classroom.</i>	<u>Section 05 (11:50 class):</u> Thursday, December 13 th , from 10:30 am to 12:30 pm <i>in our usual classroom.</i>
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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 & 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>

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).

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.

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 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.

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. 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 discreetly tell me if that is the case for you and I will confidentially accommodate your request.
2. 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.
3. If there is ever a time that you feel this course or the curriculum is not equitable, please email me or meet with me to discuss your concerns so I have a chance to address that.

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, 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.
- If you have an emergent, extenuating circumstance that makes it necessary to take an alternate exam, it is your responsibility to discuss that with me, before the exam occurs, or as soon as possible. In general, I allow exams to be taken early, but not late.
- If you have crisis-level extenuating circumstances which affect your class performance and you need guidance/advice/flexibility, please 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.
- 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 someone else 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 shall 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 will regularly post announcements to the class in Canvas and will hold you accountable for receiving that information. Be sure to turn on your notifications in Canvas so you are alerted to announcements I make in Canvas as well as grade changes, discussion posts, etc.
- If you have questions about any exam/assignment grade, or you want to appeal the grading of the exam/assignment, you must bring it to me within one week of the exam/assignment being turned 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/assignment.
- 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 during any in-class quiz or exam is considered cheating and cause for receiving an automatic zero. 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.

- 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 or math grammar mistakes for which you lost points. 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 or some way to get a higher grade (however you want to word it) when you realize you don't like your grade. Your need to get into a certain program, or needing a specific grade for your work or scholarship or not wanting to upset whomever is paying for your college are all your own personal dilemmas that are truly separate from how I assign grades. If you email me at the end of the semester to suggest that you deserve a chance to get a higher grade, I will forward your email to the Dean of Students office so you can get properly counseled in how to behave professionally in an academic setting. The only way to "better your grade" by the end of the semester is to retrieve your final exam and look to see if you have any grading appeals. I'm happy to look over those and possibly give points back, if it's warranted.

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.