

MATH 1220-006 Calculus II, Fall 2021

Class Meetings: TuThu 6-8pm in AEB 320

Instructor: Dr. Jody Reimer

Preferred name & pronouns: Jody or Dr. Reimer, she/her

Email: reimer@math.utah.edu

Instructor contact: To contact Dr. Reimer, please use email. Additionally, your instructor will stay behind for a few minutes after each class for brief questions.

Office Hours: Tuesday 2-3pm (one-on-one meetings; online via Canvas or in person at LCB 301) and Wednesday 4-5pm (group problem solving; online via Canvas), or by appointment.

Textbook: *Calculus with Differential Equations*, by Varberg, Purcell, and Rigdon (9th edition)

For information on purchasing the textbook, go to <http://www.math.utah.edu/schedule/bookInfo/>

Course Information: Math 1220 Calculus II is a 4 credit course.

Prerequisite Information: “C” or better in (MATH 1210 OR MATH 1250 OR MATH 1270 OR MATH 1311 OR MATH 1310) OR AP Calculus AB score of at least 4 OR AP Calculus BC score of at least 3.

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).

Canvas: Canvas will be used for posting course announcements, homework assignments, grades, files and any relevant supplementary material. You can access the Canvas page through CIS or by logging in at utah.instructure.com. Students should check the Canvas page regularly for course information and resources. Email notifications and correspondence will be sent to the student’s UMail address ([u-number]@utah.edu); this email account must be checked regularly.

Grading: The following are the grade components and the percentage each contributes to a student’s final grade:

- **Homework Assignments (30%)**- Roughly three textbook sections are due most Wednesdays by midnight. The homework will typically cover material covered up to and including the preceding Thursday. If you click on a homework assignment in the Assignments tab in Canvas, you will see the list of assigned problems. Three of the problems will be selected for grading, each graded out of 5 points. An additional 5 points will be given for completion, so each assignment is out of 20 total. **The two lowest homework scores will be dropped. Additionally, two homework assignments may be submitted up to a week late without penalty; any further late assignments will not be accepted.** Homework must be submitted electronically to the appropriate assignment page in Canvas. Homework may be completed by hand on paper and then scanned (e.g., using a smartphone) and uploaded as a pdf. Alternatively, homework may be completed on some kind of electronic writing surface (e.g., a tablet).
- **Quizzes (5%)**- In the first 15 minutes of most Tuesday classes, a short 1-2 problem quiz testing fundamentals will be given. The quiz will cover relevant topics covered in the previous week’s lectures. **The lowest two quiz scores will be dropped.**
- **Midterm Exams (40%, 10% each)**- Four 45-minute midterm exams will be given on select Thursdays. You will have the first half of the class period to complete the exam. A practice exam will be posted several days prior to the midterm that will cover the same material. Dates of the midterm exams will be Thursday Sep. 16, Thursday Oct. 7, Thursday Nov. 4, and Tuesday Nov. 30.
- **Final Exam (25%)**- A two-hour comprehensive exam will be given. You will have the option to replace one of your midterm scores with your grade from the relevant part of the final exam. As with the midterms, a practice final will be posted several days prior. Our final exam is scheduled for Tuesday Dec. 14th from 6-8pm in AEB 320 (our usual classroom).

Solutions used for grading will be made available to students for all homework, labs, and tests. Students are encouraged to use this as a learning tool as well as to check their score. Re-grade requests must be made no more than 2 weeks after a grade is posted.

Students with university excused absences (band, debate, student government, intercollegiate athletics) should make alternate arrangements with me as soon as possible if the absence interferes with any course components.

Final course letter grades will be determined as follows: If X is your course percentage weighted according to the above, then $X \geq 93\% \Rightarrow A$, $X \geq 90\% \Rightarrow A-$, $X \geq 87\% \Rightarrow B+$, $X \geq 83\% \Rightarrow B$, $X \geq 80\% \Rightarrow B-$, $X \geq 77\% \Rightarrow C+$, $X \geq 73\% \Rightarrow C$, $X \geq 70\% \Rightarrow C-$, $X \geq 67\% \Rightarrow D+$, $X \geq 63\% \Rightarrow D$, $X \geq 60\% \Rightarrow D-$, $X < 60\% \Rightarrow E$.

The instructor retains the right to modify this grading scheme during the course of the semester; students will, of course, be well notified of any adjustments.

Additional Resources

- **Tutoring Center & Computer Lab**- There is free tutoring in the T. Benny Rushing Mathematics Student Center (room 155, the lower level between JWB and LCB), as well as a computer lab. For more information see <http://www.math.utah.edu/undergrad/mathcenter.php>
- **Private Tutoring**- ASUU Tutoring Center, 330 SSB. There is also a list of tutors at the math department office JWB 233.
- **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/>

Calculators: While basic calculators are allowed, it is in your best interest not to become too dependent on your calculator since it will not be allowed on exams. On homework and exams, you must write out the details of your computation, regardless of whether a calculator was used. No graphing or scientific calculators (or their web equivalents) may be used on tests. If in doubt about your particular calculator, please check with your instructor.

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

1. Compute derivatives and integrals for exponential, logarithmic, hyperbolic functions, and inverse trigonometric functions.
2. 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.
3. 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.
4. Compute improper integrals.
5. Understand the difference between an infinite sequence and infinite series and determine if a sequence converges or diverges.
6. Determine whether or not an infinite series of numbers converges or diverges using a variety of tests.
7. Understand what it means for a Power Series to converge or diverge and be able to find the Taylor Series for a given function. Determine how closely a Taylor polynomial approximates a function using Taylor's Remainder Theorem.
8. Differentiate and integrate functions in polar coordinates.

COVID-19 Information: University leadership has urged all faculty, students, and staff to model the vaccination, testing, and masking behaviors we want to see in our campus community. These include: vaccination, masking indoors, and, if unvaccinated, getting weekly asymptomatic coronavirus testing.

Get a COVID-19 vaccination if you have not already done so. Vaccination is proving highly effective in preventing severe COVID-19 symptoms, hospitalization and death from coronavirus. Vaccination is the single best way to stop this COVID resurgence in its tracks. Many in the campus community already have gotten vaccinated, including more than 80% of U. employees and over 70% of U. students. You can visit <http://mychart.med.utah.edu/>, <http://alert.utah.edu/covid/vaccine>, or <http://vaccines.gov/> to schedule your free vaccination.

While masks are no longer required outside of Health Sciences facilities, UTA buses and campus shuttles, CDC guidelines now call for everyone to wear face masks indoors. Check the CDC website periodically for masking updates <https://www.cdc.gov/coronavirus/2019-ncov/vaccines/fully-vaccinatedguidance.html>. Consider treating masks like seasonal clothing (i.e. during community surges in COVID transmission, masks are strongly encouraged indoors and in close groups outside).

If you are not yet vaccinated, get weekly asymptomatic coronavirus tests. This is a helpful way to protect yourself and those around you because asymptomatic individuals can unknowingly spread the coronavirus to others. Asymptomatic testing centers are open and convenient, with online scheduling and saliva tests (no nasal swabs). They are free to all students returning to campus (required for students in University housing). Results are often available within 24 hours. Visit alert.utah.edu/covid/testing.

Remember: If you test positive for COVID-19, you are required to self-report via <https://coronavirus.utah.edu/>.

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. Students 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, plagiarism, and/or collusion, as well as fraud, theft, etc. Students should read the Code carefully and know they are responsible for the content. According to Faculty Rules and Regulations, it is the faculty responsibility to enforce responsible classroom behaviors, and I will do so, beginning with verbal warnings and progressing to dismissal from and 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>

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.

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 each 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 papers, exams, 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.

Safety Statement: The University of Utah values the safety of all campus community members. To report suspicious activity or to request a courtesy escort, call campus police at 801-585-COPS (801-585-2677). You will receive important emergency alerts and safety messages regarding campus safety via text message. For more information regarding safety and to view available training resources, including helpful videos, visit safeu.utah.edu.

University Counseling Center The University Counseling Center (UCC) provides developmental, preventive, and therapeutic services and programs that promote the intellectual, emotional, cultural, and social development of University of Utah students. They advocate a philosophy of acceptance, compassion, and support for those they serve, as well as for each other. They aspire to respect cultural, individual and role differences as they continually work toward creating a safe and affirming climate for individuals of all ages, cultures, ethnicities, genders, gender identities, languages, mental and physical abilities, national origins, races, religions, sexual orientations, sizes and socioeconomic statuses.

Office of the Dean of Students The Office of the Dean of Students is dedicated to being a resource to students through support, advocacy, involvement, and accountability. It serves as a support for students facing challenges to their success as students, and assists with the interpretation of University policy and regulations. Please consider reaching out to the Office of Dean of Students for any questions, issues and concerns. 200 South Central Campus Dr., Suite 270. Monday-Friday 8 am-5 pm.

Student Success Advocates: The mission of Student Success Advocates is to support students in making the most of their University of Utah experience (ssa.utah.edu). They can assist with mentoring, resources, etc. Any student who faces challenges securing their food or housing and believes this may affect their performance in the course is urged to contact a Student Success Advocate for support (<https://asuu.utah.edu/displaced-students>).

Course Roadmap Week-by-Week: Below is an outline and rough schedule of the sections and topic covered in this course.

Week 1 Introduction, Chapters 6.1, 6.2

Week 2 Chapters 6.3, 6.4, 6.5 - **Note, Friday Sep. 3rd is the last day to drop**

Week 3 Chapters 6.6, 6.7, 6.8

Week 4 Chapter 6.9, **Test 1 (Thursday, Sep. 16)**

Week 5 Chapters 7.1, 7.2, 7.3

Week 6 Chapter 7.4, 7.5, 7.6

Week 7 Chapters 8.1, 8.2, **Test 2 (Thursday, Oct. 7)**

Week 8 Fall Break

Week 9 Chapters 8.3, 8.4, 9.1 - **Note, Friday Oct. 22nd is the last day to withdraw**

Week 10 Chapters 9.2, 9.3, 9.4

Week 11 Chapter 9.5, **Test 3 (Thursday, Nov. 4)**

Week 12 Chapters 9.6, 9.7

Week 13 Chapters 9.8, 9.9

Week 14 Chapter 10.5 (no class Thursday, Nov. 25)

Week 15 **Test 4 (Tuesday, Nov. 30)**, Chapter 10.6

Week 16 Chapter 10.7 (last day of class is Dec. 9)

Week 17 **Final Exam Tuesday Dec 14th from 6-8pm**