

MATH 1220-005 Calculus II, Fall 2021

Class Meetings: MTWTF at 11:50am-12:40pm in CSC 208

Instructor: Sam Swain (Call me “Sam” or “Mr. Swain”)

Contact: Message me on Canvas or email me at swain@math.utah.edu

Office Hours: Tuesdays 12:45pm-1:45pm in JWB 311; via Zoom (link on Canvas) day and time TBD.

Text: *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. Attendance is encouraged and usually beneficial, but not required.

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: You should check the course Canvas page regularly for messages, course announcements, homework assignments and solutions, grades, and any relevant supplementary material. I will communicate most class announcements directly to everyone via Canvas message, and you will receive and submit homework assignments on Canvas. You are also welcome to make use of the Canvas discussion board to discuss course problems or topics. You can access the Canvas page through CIS or by logging in at utah.instructure.com.

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

- **Homework Assignments (20%)**- Problems from usually three textbook sections are due most Wednesdays, to be submitted electronically on Canvas by 11:59pm. If you click on a homework assignment in the Assignments tab in Canvas, you will see the list of assigned problems, as well as a place to submit scans of your work. Please submit scans of your homework rather than photographs - using a scanning app, such as Adobe Scan, on your smartphone to create a PDF is also acceptable. Two to five problems will be graded for accuracy, with the remaining graded for completion. The lowest homework score will be dropped.
- **Midterm Exams (60%, 20% each)**- Three 50-minute midterm exams will be given on select Fridays. You will have the whole class period to complete the exam. A practice exam will be posted a week prior to the midterm that will cover the same material. Dates of the midterm exams will be Friday, Sep. 17th, Friday, Oct. 22nd, and Friday, Nov. 19th. One midterm exam grade will be replaced with the grade of the corresponding section on the final exam for which you show the most improvement.
- **Final Exam (20%)**- A two-hour comprehensive exam will be given. As with the midterms, a practice final will be posted a week prior. Our final exam is scheduled for Tuesday Dec 14 from 10:30am-12:30pm in CSC 208.
- **Late Policy:** If you ask for an extension - no explanation necessary - on any one homework assignment before it is due, I will grant it without penalty. Additional extensions will require further discussion with me and could be subject to a penalty. Extensions are generally not available for exams, excepting university excused absences for which you have made prior arrangements with me.

Although most homework assignments will be officially due by 11:59pm on a Wednesday, any assignment received before the grader has begun grading will be considered for full credit.

If you do not ask for an extension beforehand, any homework assignment submitted late but by the Wednesday before the midterm containing the content of the assignment will be considered for 60% credit. Any late assignment submitted past the relevant midterm but before 11:59pm on December 10 will be considered for 30% credit.

If you find yourself in an emergency or other unforeseen circumstance (e.g. isolating after a positive COVID test) that interferes with your ability to attend class, submit an assignment on time, or take an exam, please let me know as soon as you can, and I will do my best to arrange fair accommodations. Although the above may seem strict with respect to deadlines - in an attempt to maintain some amount of order this semester - I hope to be flexible regarding individual circumstances while maintaining a fair learning environment for everyone.

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 $\{X \geq 93\% \Rightarrow A, X \geq 90\% \Rightarrow A-, X \geq 87\% \Rightarrow B+, X \geq 83\% \Rightarrow B, X \geq 80\% \Rightarrow B-, X \geq 77\% \Rightarrow C+, X \geq 73\% \Rightarrow C, X \geq 70\% \Rightarrow C-, X \geq 67\% \Rightarrow D+, X \geq 63\% \Rightarrow D, X \geq 60\% \Rightarrow D-, X < 60\% \Rightarrow E\}$. I do not round grades to the nearest percent, so, for example, a 79.86% will earn a $C+$, not a $B-$.

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: Calculators will not be allowed on exams. They may be used on homework, but you should still write out the details of your computation. It is in your best interest not to become too dependent on your calculator since they will not be allowed on exams.

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.

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>

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 Chapters 6.9, review, Exam 1 (Sep. 17)

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, 8.3

Week 8 Fall Break

Week 9 Chapters 8.4, review, Exam 2 (Oct. 22) **Note, Friday Oct. 22nd is the last day to withdraw**

Week 10 Chapters 9.1, 9.2 9.3

Week 11 Chapters 9.4, 9.5

Week 12 Chapters 9.5, 9.6

Week 13 Chapters 9.7, review, Exam 3 (Nov. 19)

Week 14 Chapters 9.8, 9.9

Week 15 Chapters 10.5-10.6

Week 16 Chapter 10.7, review

Week 17 Final Exam Tuesday, Dec 14th from 10:30am-12:30pm.

Class COVID-19 Guidelines Be courteous to others. Take heed of the university guidelines below. If the instructor tests positive for coronavirus or is isolating due to contact tracing, the course may temporarily move to Zoom, in which case you will be notified as quickly as possible via Canvas, and lectures will take place at the same time as the normal in-person class. This is the only reason lectures might not take place in person, excepting some university mandate, but be ready to be flexible.

University COVID-19 Guidelines: University leadership urges all faculty, students, and staff to model the vaccination, testing, and masking behaviors we want to see in our campus community. These include:

- **Vaccination:** 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. Visit <http://mychart.med.utah.edu/>, <http://alert.utah.edu/covid/vaccine>, or <http://vaccines.gov/> to schedule your vaccination.
- **Masking:** 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.
- **Testing:** 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. Saliva based testing is available at alert.utah.edu/covid/testing
- **Self-Reporting:** All of us, including faculty, students, and staff, must self-report if we test positive for COVID-19 via this website: <https://coronavirus.utah.edu/>.

The following five items are standard syllabus items not directly related to Covid. Note, however, that some of the services described may be available only on a modified or limited basis due to the Covid pandemic. Check online or call the relevant unit for up to date information.

The Americans with Disabilities Act: 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, <https://disability.utah.edu/>. 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, veteran's status or genetic information. If you or someone you know has been harassed or assaulted on the basis of your sex, office for equal opportunity and affirmative action including sexual orientation or gender identity/expression, you are encouraged to report it to the University's Title IX Coordinator; Director, Office of Equal Opportunity and Affirmative Action, 135 Park Building, 801-581-8365, <https://oeo.utah.edu/contact-us/index.php> or to the Office of the Dean of Students, 270 Union Building, 801-581-7066, <https://deanofstudents.utah.edu/>. For support and confidential consultation, contact the Center for Student Wellness, 426 SSB, 801-581-7776. To report to police, contact the Department of Public Safety, 801-585-2677(COPS), <https://police.utah.edu/>.

Campus Safety: 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 UCC staff is committed to supporting the mental health needs of our campus community. Their phone number is 801-581-6826. Their hours are Monday-Friday, 8:00am-5:00pm. For after-hours emergencies, contact the 24/7 Crisis Line: 801-587-3000 . More information is at <https://counselingcenter.utah.edu/> .

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. To contact the Office of the Dean of Students, please email deanofstudents@utah.edu or call 801-581-7066. There is more information at <https://deanofstudents.utah.edu/> .

Student Names and Personal Pronouns: 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). I will refer to you with the name and pronoun that you feel is 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 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.

Student Mental Health Resources: Rates of burnout, anxiety, depression, isolation, and loneliness have noticeably increased during the pandemic. If you need help, reach out for campus mental health resources, including counseling, trainings and other support, at <https://studentaffairs.utah.edu/mental-health-resources/index.php>

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>).