

# MATH 1220 Calculus II, Fall 2020

**Instructor:** Peter Wear

**Email:** wear@math.utah.edu

**Course Type:** This is an Interactive Video Conferencing (IVC) class. This means that all classes will be held live over Zoom. Details for accessing class will be posted on Canvas.

**Class Meetings:** MTWF at 8:35-9:25 am on Canvas.

**Learning Assistants:** Abigail Cooper (u0765900@utah.edu) and Steven Marz (u1153672@utah.edu)

**Office Hours:** TBA (over zoom)

**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.

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## Course Essentials

**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.

**Text:** *Calculus with Differential Equations*, by Varberg, Purcell, and Rigdon (9th edition). For information on purchasing the textbook, including an e-book option, see <http://www.math.utah.edu/schedule/bookInfo/>. The university library has scanned and uploaded Chapter 6 of the textbook (the first chapter that we will be covering) in case you aren't able to get a copy of the textbook right away. You can find that here <https://lib.utah.edu/discover/?search=1220>.

**Canvas:** Canvas will be used for posting course announcements, Zoom links, homework assignments, grades, files and any relevant supplementary material. You are also encouraged 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. Please check the Canvas page regularly for course information and resources.

**Technical requirements:** As this course will be entirely online, the following technical skills and requirements are necessary:

- Canvas and Zoom navigation skills are required as they will be critical to access all features and resources of this course. **You will need to be logged onto your university Zoom account to access the lectures.**
- A strong internet connection and adequate bandwidth is required as classes will be live over Zoom.
- A webcam is required as the quizzes and final will be proctored over Zoom.

For information on borrowing a laptop from the university or about off-campus wifi access, see <https://lib.utah.edu/coronavirus/checkout-equipment.php>

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## Course Design

All classes will be delivered via Zoom video conferencing on Canvas during class days and times. Most classes will involve a combination of lecture and group work, with the group work being done in pre-assigned Zoom breakout rooms. This structure is meant to help you stay engaged during the lecture, give you opportunities to put new concepts into practice as quickly as possible, and help you meet each other.

Worksheets will be available on Canvas before the start of each class. They will typically contain summaries of the main ideas in each lecture, examples that will be solved during the lecture, and additional optional exercises for extra practice.

**Grading:** The following are the grade components and the percentage each contributes to your final grade:

- **Homework Assignments (20%)**- Weekly homework will be assigned and submitted online using WeBWorK. **Homework will be due on Tuesdays at 9 pm.** Homework will cover the material discussed in class up to the previous Friday. Late homework will not be accepted, but the lowest two homework scores will be dropped. You may use calculators on the homework.
- **Quizzes (60%)**- Six 20-minute quizzes will be given, one every other Wednesday. Each quiz will cover material up to the preceding Friday. The lowest quiz score will be dropped. All quizzes will be given and proctored over Zoom, and will take place at the end of lectures. **The quizzes will take place on the following dates: February 10th, 24th, March 10th, 24th, April 7th, 21st.** You may use one single-sided, hand-written page (8.5 by 11) of notes on each quiz. Calculators will not be allowed (or needed) on the quizzes. Quizzes will cover the material discussed in class up to the previous Friday.
- **Final Exam (20%)**- A comprehensive exam will be given and proctored over Zoom at the end of the semester. **Our final exam is scheduled for Friday, April 30th from 8-10am.** You may use one double-sided, hand-written page (8.5 by 11) of notes on the final. Calculators will not be allowed (or needed) on the final.

Final course letter grades will be determined as follows: 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). The scale might be adjusted to become more lenient, but will not be any stricter.

**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. Determine how closely a Taylor polynomial approximates a function using Taylor's Remainder Theorem.
- Differentiate and integrate functions in polar coordinates.

**Mathematical resources:**

- **Tutoring Center & Computer Lab**- There is free online tutoring at the virtual math center <https://utah.instructure.com/courses/613503/>
- **Private Tutoring**- See the ASUU website for additional tutoring options <https://www.asuu.utah.edu/student-resources/>. 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 the course material. These can be found at <http://www.math.utah.edu/lectures/>

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## Additional Policies and Resources

**Academic Code of Conduct:** Students are encouraged to review the Student Code for the University of Utah: <https://regulations.utah.edu/academics/6-400.php>. In order to ensure that the highest standards of academic conduct are promoted and supported at the University, students must adhere to generally accepted standards of academic honesty, including but not limited to refraining from cheating, plagiarizing, research misconduct, misrepresenting one's work, and/or inappropriately collaborating. A student who engages in academic misconduct as defined in Part I.B. may be subject to academic sanctions including but not limited to a grade reduction, failing grade, probation, suspension or dismissal from the program or the University, or revocation of the student's degree or certificate. Sanctions may also include community service, a written reprimand, and/or a written statement of misconduct that can be put into an appropriate record maintained for purposes of the profession or discipline for which the student is preparing.

**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).

**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 <https://safeu.utah.edu>

**Inclusivity Statement:** It is my intent that students from all diverse backgrounds and perspectives be well served by this course, that students' learning needs be addressed both in and out of class, and that the diversity that students bring to this class be viewed as a resource, strength and benefit. It is my intent to present materials and activities that are respectful of diversity: age, color, disability, gender, gender identity, gender expression, national origin, political affiliation, race, religion, sexual orientation, and veteran status, and other unique identities. gender, sexuality, disability, age, socioeconomic status, ethnicity, race, culture, and other unique identities. Your suggestions are encouraged and appreciated. Please let me know ways to improve the effectiveness of the course for you personally or for other students or student groups. In addition, if any of our class meetings conflict with your religious events, please let me know so that we can make arrangements for you.

**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 UIDcard, please visit the LGBT Resource Center Room 409 in the Olpin Union Building, or email [bpeacock@sa.utah.edu](mailto: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 students ability to succeed and thrive at the University of Utah. For helpful resources contact the Center for Student Wellness at <https://www.wellness.utah.edu> or 801-581-7776.