MATH 1220-003 Calculus II, Summer 2020

Class Meetings: Via videos on Canvas
Instructor: Carlos Ospina
Email: ospina@math.utah.edu
Office Hours: Monday 9-10am and Wednesday 9-10am on Zoom (a recurring link with password will be sent to students' email) Equations **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/`
If you log in to the library, using this link `https://utah-primoprod.hosted.exlibrisgroup.com/primo-explore/search?tab=uuu_alma_cr_restricted&search_scope=UUU_ALMA_CR_RESTRICTED&vid=UTAH&mode=Basic` and searching MATH 1220 you can find individual chapters of the book.

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 are also welcome to make use if 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. 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 four textbook sections are due most Fridays at the beginning of class (including days of exams, but not the week following). The homework will typically cover material covered up to and including the preceding Monday. 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 by the grader, each graded out of 5 points. There will also be 5 points given for completion. The lowest homework score will be dropped. Homework will only be accepted in **Gradescope**, it will have a deadline and late submissions will in general not be accepted.

- **Midterm Exams (45%, 15% each)**- Three 60-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 Jun. 19th, Friday Jul. 3rd, and Friday Jul. 17th.

- **Final Exam (25%)**- A two-hour comprehensive exam will be given. As with the midterms, a practice final will be posted a week prior. Date: TBD.

Exams: They will be schedule in advance and proctor using Zoom.
Calculators: Simple calculators will be allowed on exams, not programmable calculators or devices. You can use it 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.

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 $\{X \geq 88\% \Rightarrow A, X \geq 85\% \Rightarrow A-, X \geq 82\% \Rightarrow B+, X \geq 73\% \Rightarrow B, X \geq 70\% \Rightarrow$

$B-$, $X \geq 67\% \Rightarrow C+$, $X \geq 58\% \Rightarrow C, X \geq 55\% \Rightarrow C-$, $X \geq 52\% \Rightarrow D+$, $X \geq 43\% \Rightarrow D$, $X \geq 40\% \Rightarrow D-$, $X < 40\% \Rightarrow E\}$.

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**- University Tutoring Services, 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/

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

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 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 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 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.

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

Week 1 Introduction, Chapters 6.1-6.6

Week 2 Chapters 6.7-6.9, 7.1, review, Exam 1 (June 19) **Note, Monday June 15 is the last day to drop**

Week 3 Chapters 7.2-7.5

Week 4 Chapters 7.6, 8.1, 8.2, review, Exam 2 (July 3) **Note, Saturday July 4 is the last day to withdraw**

Week 5 Chapters 8.3-8.4, 9.1-9.4

Week 6 Chapters 9.5-9.8, review, Exam 3 (July 17)

Week 7 Chapters 9.8-9.9, 10.5-10.6

Week 8 Chapters 10.7, review, Final Exam