MATH 2210 Calculus III, Spring 2020 Section 6

Class Meetings: MWF 9:40-10:30am in JTB 130
Instructor: Leo Herr
Email: herr@math.utah.edu
Office Hours: MWF 11:45-12:45 in JWB 125 or by appointment.
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 2210 Calculus III is a 3 credit course.
Prerequisite Information: “C” or better in (MATH 1220 OR MATH 1250 OR MATH 1320) OR AP Calculus BC score of at least 4.
Course Description: Vectors in the plane and in 3-space, differential calculus in several variables, integration and its applications in several variables, vector fields and line, surface, and volume integrals. Green’s and Stokes’ theorems.

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 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. 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 (20%)- Roughly three 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. 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 class, no electronic copies. Late homework is, in general, not accepted.

- Quizzes (10%)- Weekly quizzes will be given to ensure proficiency in the material covered. They may take several forms, including in-class or at-home quizzes and group projects.

- Midterm Exams (44%, 22% each)- Two 50-minute midterm exams will be given. You will have the whole class period to complete the exam. Dates of the midterm exams will be Friday Feb. 14th and Friday Apr. 3rd.

- Final Exam (26%)- A two-hour comprehensive exam will be given. As with the midterms, a practice final will be posted a week prior.

Final Exam: Friday, April 24, 2020 8:00 – 10:00 am

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 according to the percentage earned in the class. Cutoffs may depend on the performance of the class as a whole.

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. Perform basic vector computations, as well as dot and cross products of two vectors and projection of one vector onto another vector.

2. Convert between cylindrical, rectangular and spherical coordinates. Understand when it’s prudent to switch to one coordinate system over another in computing an integral.

3. Determine the equation of a plane in 3-d, including a tangent plane to a surface in 3-d.

4. Find the parametric equations of a line in 3-d.

5. Perform calculus operations on functions of several variables, including limits, partial derivatives, directional derivatives, and gradients; understand what the gradient means geometrically.

6. Find maxima and minima of a function of two variables; use Lagrange Multipliers for constrained optimization problems.

7. Understand divergence and curl of a vector field.

8. Compute double and triple integrals in rectangular, spherical and cylindrical coordinates; proper use of double or triple integrals for finding surface area or volume of a 3-d region.

9. Compute line and surface integrals.

10. Determine if a vector field is conservative and if so, find the corresponding potential function.

11. Use and understand when to apply Green’s Theorem, Gauss’ Divergence Theorem and Stokes Theorem.

**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 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, 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 UID 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.

**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.

**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 10.4, 11.1

**Week 2** Chapters 11.2, 11.3, 11.4 *Note, Friday Jan. 17th is the last day to drop*

**Week 3** Chapters 11.5, 11.6, 11.7

**Week 4** Chapters 11.8, 11.9, 12.1

**Week 5** Chapters 12.2, 12.3, 12.4, 12.5

**Week 6** Chapter 12.6, review, Exam 1 (Feb. 14)

**Week 7** Chapters 12.7, 12.8, 12.9

**Week 8** Chapters 13.1-13.2, 13.3

**Week 9** Chapters 13.4, 13.5, 13.6 *Note, Friday Mar. 6th is the last day to withdraw*

**Week 10** Spring Break (Mar. 8- Mar. 15)

**Week 11** Chapters 13.7, 13.8, 13.9

**Week 12** Chapters 14.1, review, Exam 2 (Mar. 27)

**Week 13** Chapters 14.1, 14.2, 14.3

**Week 14** Chapters 14.3, 14.4

**Week 15** Chapters 14.5, 14.6

**Week 16** Chapter 14.7, review, Final Exam Thursday April 23rd, from 1-3pm.
RECOGNITION of POLICIES AND DATES
Fill out, sign and date and bring to class

YOUR NAME: 

SECTION: 

I acknowledge that I have been informed that the midterm exams are scheduled for:

Midterm 1: Friday, February 14th.
Midterm 2: Friday, April 3rd.

I have no schedule conflicts and can attend all of these exams.

Furthermore, I acknowledge that I have been informed that the final exam is scheduled for

Friday, April 24, 2020 8:00 – 10:00 am.

I have no schedule conflicts and can attend the final exam.

I have read and I understand the syllabus. I understand the system that will be used to evaluate my work in this course.

SIGN: 

DATE: 