

**Instructor:** Trent DeGiovanni

**E-Mail Address** degiovan@math.utah.edu

**Instructor Office hours:** TBD

**Office hours location:** Online (Zoom)

**Course type:** IVC

**Course meetings:** MTWF 10:45-11:35

**Course location:** Online (Zoom)

**Learning assistant:**

**Lab meetings:** Section 017: Th 10:45-11:35, Section 018: Th 9:40-10:30

**Course Information:** Math1210, Calculus is a 4-credit semester course

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

**ISBN:** 0132306336

### Prerequisite

C or better in (((MATH 1050 AND 1060) OR MATH 1080 OR (MATH1060 AND Accuplacer CLM score of 80+)) OR AP Calc AB score of 3+ OR Accuplacer CLM score of 90+ OR ACT Math score of 28+ OR SAT Math score of 630+.

### Course Description

Functions and their graphs, differentiation of polynomial, rational and trigonometric functions. Velocity and acceleration. Geometric applications of the derivative, minimization and maximization problems, the indefinite integral, and an introduction to differential equations. The definite integral and the Fundamental Theorem of Calculus.

### Expected Learning Outcomes

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

1. Take limits of algebraic and trigonometric expressions of the form  $0/0$  (that simplify), non-zero number over 0, including limits that go to (positive or negative) infinity, limits that don't exist and limits that are finite.
2. Use and understand the limit definitions of derivative for polynomial, rational and some trigonometric functions; understand the definition of continuity and consequences.
3. Differentiate all polynomial, rational, radical, and trigonometric functions and compositions of those functions; perform implicit differentiation and compute higher order derivatives.
4. Use differentiation to find critical points and inflection points, the signs of the first and second derivatives, and domain and limit information to determine vertical and horizontal asymptotes. Then use all of that information to sketch the graph of  $y = f(x)$ .
5. Apply differentiation to optimization, related rates, linear approximation, and problems involving differentials.
6. Compute indefinite integrals and find antiderivatives, including finding constants of integration given initial conditions.
7. Compute definite integrals using the definition for simple polynomial functions. Compute definite integrals using the power rule, basic u-substitution, and the Fundamental Theorems of Calculus.
8. Apply the definite integral to compute area between two curves, volumes of solids of revolutions, arc length, surface area for surfaces of revolution, and work problems.

### Attendance

Course lectures will take place via Zoom. For security reasons students **must be logged into a Zoom account associated with their UID email**. During lecture, there will be times where the instructor will put students into breakout rooms to work on a problem with a group. This attendance policy is in place to better facilitate these discussion.

My understanding of online classes via Zoom is dynamic and my hope is to meet students where they are to give them the learning experience that works for them. There are three kinds of attendance

for this course. **This is not a hierarchy nor will students who select any of these options be given preferential treatment.**

1) “Active” IVC, these are students who will be attending the course at the set time via Zoom. During class, these students will be placed in breakout rooms to go over problems with other “active” students. Ideally, these students would have both a microphone and a camera to be able to discuss problems with others and share their work. This is by no means a requirement, and a motivated student who wants this experience is welcome to participate via chat. The instructor will regularly visit these breakout rooms during the course.

2) “Passive” IVC, these are students who will be attending the course at the set time via zoom. These students do **not** want to participate in group discussions of problems during class. They will be placed in a separate breakout room during class discussion where discussion is not expected. Students are welcome to privately message the instructor questions during this time or call them to the breakout room to ask questions.

3) Asynchronous attendance, the instructor will be uploading lecture videos after every class so you can watch lectures later. Students are encouraged to consider an asynchronous section of the course with a different instructor if their preference is for using only uploaded lecture videos. These courses and lectures will just be set up in a way that is more conducive to this experience.

At the beginning of the semester there will be a survey where you will identify which kind of attendance you expect to have. While I set up the course geared towards an active experience, students know what kind of learning works best for them. Everyone has a dynamic situation and it may be the case that you need to “attend” class in a different fashion on any given day. Students should private message the instructor during class if they would like to be moved between “passive” and “active” rooms. There does not need to be any justification for this. The instructor may move students from an “active” breakout room to a “passive” one if students are repeatedly not participating. Other students in the group may inform the instructor if this a problem. This is by no means punitive and is only done to better facilitate discussion.

The active breakout groups will be changed occasionally during the semester. A student may request, without justification, to be moved to a different breakout group.

**Attendance is not mandatory and students do not need to email the instructor if they will be missing class.** That being said, if you are a student who regularly attends class and a situation arises that impedes your ability to do so it is encouraged that you inform the instructor. This more easily allows for the accommodation that such a situation generally necessitates.

**Mandatory online instruction periods:** All classes will be online March 1- March 14. The class will proceed via Zoom meetings in the same fashion.

### **Covid-19**

Students must self-report if they test positive for COVID-19 via [coronavirus.utah.edu](https://coronavirus.utah.edu). Please do not come to class if you are experiencing COVID-19 symptoms. Remember to maintain social distancing at all times. Face coverings are required for students and faculty. Based on CDC guidelines, the university requires everyone to wear face coverings in shared public spaces on campus, including our classroom. As a reminder, when I wear a face covering, I am protecting you. When you wear a face covering, you are protecting me and all of your classmates. If you forget your face covering, I will ask you to leave class to retrieve it. If you repeatedly fail to wear a face covering in class, I will refer you to the Dean of Students for a possible violation of the Student Code. Note that some students may qualify for accommodations through the Americans with Disabilities Act (ADA). If you think you meet these criteria and desire an exception to the face covering policy, contact the Center for Disability and Access (CDA). Accommodations should be obtained prior to the first day of class so that I am notified by CDA of any students who are not required to wear a face covering

### **Technological requirements:**

These policies are in place to help the course run smoothly.

1. Students must have access to a scanner. Using a device to scan in images is fine. Blurry images and illegible work will not be accepted.
2. Students must have access to a webcam and microphone.
3. Students must have Zoom installed.

4. Students must have access to internet with adequate bandwidth to support video **at a minimum for exams**.
5. Students will use Gradescope to turn in assignments. This will be a linked page in Canvas. There will be a quiz 0 to help student's familiarize themselves with Gradescope. When you submit an assignment you are asked to select the pages that problems appear on. If no page is selected for a problem, you will receive a zero for this problem.
6. It is the student's responsibility to keep track of due dates and turn in assignments on time. Technical troubles are not an acceptable excuse for turning in assignments late. If you expect to have troubles with this class due to technical issues, such as inconsistent internet access or needing to use a VPN due to living outside of the US, it is your responsibility to inform the instructor by the end of the first week via email. If issues arise during the course of the semester, it is the student's responsibility to inform the instructor as soon as feasible.

### Late work

Late work will not be accepted without documentation of extenuating circumstances. If circumstances arise making it challenging to submit work (e.g. you contract Covid) due dates can be pushed back without documentation if the instructor is informed 24 hours **before** the due date. It is unnecessary to inform the instructor of the exact circumstances, it is sufficient to simply email that a student needs more time a day prior to the due date. If this policy is repeatedly invoked by a student the instructor may ask for documentation or further context.

### Course communication

All course communication will take place via Canvas or Zoom. It is the student's responsibility to regularly check the Canvas announcements for course updates. I encourage you to use Canvas discussions as a place to build classroom community, form study groups, and get assistance from others or myself. Keep communications civil and make sure they comply with the student code of conduct. There will be zero tolerance for derogatory or offensive posts. **This includes private messages to other students and the instructional team.** Private chat will be enabled during the Zoom calls, **the instructor cannot view private messages between other users.** This feature will be left enabled to help better foster community but if there are reports of it being abused it will be turned off. If you are a victim of inappropriate zoom chats during this, or any other course, it is encouraged that you document this and report it to the Office of Inclusive Excellence (<https://inclusive-excellence.utah.edu/secure/report-form.php>).

### Course Outline

**Textbook Coverage:** 0.7, 1.1-1.6, 2.1-2.9, 3.1-3.8, 4.1-4.6, 5.1-5.6

**Homework:** Roughly three textbook sections are due most Thursdays at midnight. See the course schedule for exceptions. There will be both recommended problems and grade problems, it is only necessary to turn in the graded problems. Homework assignments can be accessed under the assignments tab in Canvas and will also be linked in the Module for the week. Three of the graded problems will be selected for grading by the grader, each graded out of 5 points. There will also be 5 points given for completion. Homework will be turned in on Canvas and needs to be uploaded as a single pdf file. Half of the grade will be based on completion, and the other half will be based on solutions to select problems. The lowest two homework scores will be dropped.

**Quizzes:** There will be group quizzes roughly every week there is not an exam during the semester. For each quiz there will be a Canvas discussion, specific to your group, that will be posted in the module for the week. These quizzes will be turned in via Gradescope. Students will have 48 hours to complete the quiz and they are to be completed outside of class time. Students must turn in their own quizzes although they are encouraged to discuss the quiz with group mates. Quiz groups will be randomly assigned and will change three times during the semester. Posting questions online or asking for assistance from people who are not in your group is prohibited. If I find questions online during the semester, quizzes will become timed Canvas quizzes to be completed individually.

**Midterm exams:** Four midterm exams will be given. These exams will be administered via Zoom. Students **must have their webcams on and directed at themselves** for the duration of the exam. The exam will be released on Canvas at the beginning of the class. Students will complete the exam on their own paper. Solutions should be clearly labeled and final answers boxed when appropriate. Students will have a short period following the exam to scan their solutions and upload a single pdf file

on to Gradescope. Calculators are not allowed for exams. For a week following the grading of the exam students will have the opportunity to submit regrade requests for specific questions. The exams will take place during class time on the following dates: **February 5th, March 3rd, March 26th, and April 13th**. Your three highest exam scores (including the “final”) will count for 15% of your grade and the lowest two exam score will count for 5% of your grade.

**Final exam:** The final exam is **not comprehensive** and is essentially a fifth midterm exam. The same policies as the midterm exams apply here. It will be on **May 5th** and will begin at 10:30 AM.

**Quiz Participation:** Students must participate in Canvas discussions with their quiz group for every quiz. To receive credit student’s must make at least one post that shares a partial solution,<sup>1</sup> asks about a specific part of a problem,<sup>2</sup> answers a specific question asked by one of your group mates,<sup>3</sup> or contributes to the discussion in another meaningful way. Students can also fulfill the participation requirement by meeting with their quiz groups in another medium (Zoom, Skype, Discord, Google Hangouts, etc.). One of the students should then upload two screenshots to the corresponding Canvas discussion for that quiz. These screenshots should be taken at the beginning and end of every meeting, clearly showing the time and every participant’s name. Quiz participation will account for a quarter of the quiz grade.

**Labs:** Every Thursday a Learning Assistant- (LA) directed lab section will be held. These lab sections will have smaller class sizes, consisting of working on lab worksheets in groups. The LA will be there to help guide students through the problems. The worksheets will due by midnight on the day of the lab. The lowest lab score will be dropped.

**Extra credit:** The first time a student comes to office hours or a scheduled outside meeting and asks a question about the content of the course they will receive 10% extra credit on the following homework assignment. Any student who finds an error in solutions to homework, solutions to quizzes, the textbook, etc. and posts a Canvas discussion explaining where the error is and why it is an error will receive 5% extra credit on the homework section it pertains to.

### Grading weight and scale\*

Homework	Quizzes	Exams	Labs
16 %	16 %	55%	13%

A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E
[100,93]	(93,90]	(90,87]	(87,83]	(83,80]	(80,77]	(77,73]	(73,70]	(70,67]	(67,63]	(63,60]	(60,0]

\*The instructor has the right to modify if necessary.

**Additional resources:** There is free tutoring through the T. Benny Rushing Mathematics Student Center which is offered online. For more information see <http://www.math.utah.edu/undergrad/mathcenter.php> 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/>

**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>

**Students with disabilities** 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 Services, 162 Olpin Union Building, 581-5020

<sup>1</sup>Example of a post that would not receive credit: “I got 4 for problem 2.” Example of a post that would receive credit: “I think you need to use the product rule for problem 2 since you have the product of a polynomial and exponential. I end up getting  $f'(2) = 4$ .”

<sup>2</sup>Example of a post that would not receive credit: “How do you do number 3?” Example of a post that would receive credit: “For number 3 I think you need to use integration by parts but I cannot figure out which function to choose for  $u$  does anyone have an idea?”

<sup>3</sup>Example of a post that would not receive credit: “I got 4.” Example of a post that would receive credit: “Oh I think you need to choose  $u = x^2$  but you have to use integration by parts twice.”

(V/TDD). CDS will work with you and the instructor to make arrangements for accommodations. All information in this course can be made available in alternative format with prior notification to the Center for Disability Services.

**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/>.

**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 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 U-ID card, 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.

**Student Wellness:** 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](http://www.wellness.utah.edu) or 801-581-7776.

**Veterans Center:** If you are a student veteran, the U of Utah has a Veterans Support Center located in Room 161 in the Olpin Union Building. Hours: M-F 8-5pm. Please visit their website for more information about what support they offer, a list of ongoing events and links to outside resources: <http://veteranscenter.utah.edu/>. Please also let me know if you need any additional support in this class for any reason.

**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.