Mathematics 1210–008  
Fall 2015

Instructor  Kyle R Steffen

Class location  Tuesday and Thursday, 6–8 pm, LCB 219

Office hours  Tuesday 2:00–3:00 pm, Thursday 5:10–5:50 pm, or by appointment.

Office location  JWB 105

E-mail address  steffen@math.utah.edu

Class homepage  Canvas: [https://utah.instructure.com/courses/348588](https://utah.instructure.com/courses/348588)


Course information  Math 1210 (Calculus I) is a four-credit hour, semester-long course.

Prerequisite  Prerequisites: “C” or better in ((MATH 1050 AND MATH 1060) OR MATH 1080) OR AP Calculus AB score of 3 or better OR Accuplacer CLM score of 90 or better OR ACT Math score of 28 or better OR SAT Math score of 630 or better.

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 outcome  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 the limit definitions of derivative and definite integral for polynomial, rational and some trigonometric functions; understand definition of continuity.

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 stationary, singular and inflection points, as well as domain and limit information to determine vertical and horizontal asymptotes, and then use all of that information to sketch the graph of a curve, \( y = f(x) \).

5. Apply differentiation to optimization and related rates problems.
6. Compute indefinite and definite integrals, using the power rule and basic u-substitution and the Fundamental Theorems of Calculus.

7. Apply the definite integral to compute area between two curves, volumes of solids of revolutions, arc length, surface area for surfaces of revolution and center of mass.

**Tutoring lab**
The Mathematics Tutoring Center, adjacent to the John Widtsoe Building (JWB) and LeRoy Cowles Building (LCB), Room 155, offers free, drop-in tutoring for students in MATH 1030 (among other classes). The hours are: 8:00 AM – 8:00 PM on Monday, Tuesday, Wednesday, and Thursday; and 8:00 AM – 6:00 PM on Friday. The tutoring center is closed during semester breaks, weekends, and University holidays.

See [http://www.math.utah.edu/ugrad/tutoring.html](http://www.math.utah.edu/ugrad/tutoring.html) for more information.

**Private tutoring**
The ASUU Tutoring Center, 330 SSB, offers inexpensive private tutoring subsidized by student fees. Alternatively, the Math Department maintains a list of private tutors (available in the Math Department office in JWB 233).

**Computer lab**
Same hours and location as the Mathematics Tutoring Center (see above). See [http://www.math.utah.edu/ugrad/lab.html](http://www.math.utah.edu/ugrad/lab.html) for more information. Printers in the computer lab can be used only for math- and physics-related print jobs (and are free to use for these print jobs).

**Assessment**
- **Homework** – Homework is to be completed on WeBWorK. It will be due every Saturday by 4am (i.e. late Friday night) – except for August 29th (first week of classes) and October 17th (spring break). No late homework is allowed. There are an unlimited number of retries. It is expected that you will receive a perfect score on homeworks throughout the semester.

- **Quizzes** – There will be a short quiz (5 or 10 minutes) every Thursday in class, except weeks when an exam is given.

- **Midterm exams** – There will be two midterm exams in class on Thursday September 24th and Thursday November 5th.

- **Final exam** – The final exam will be comprehensive. It will be held in class (LCB 219), at the University-scheduled date and time: Tuesday, December 15th, 6–8 pm.

*Absence from exams* – Any schedule conflict causing you to miss an exam is your responsibility: Please let me know by e-mail well in advance. Failure to do so may result in a zero for the corresponding exam.

**Grading**
Your final grade will be a weighted average according to the following: 20% Homework, 10% Quizzes, 20% per Midterm Exam, 30% Final Exam, with some additional considerations (stated below). Letter grades will be assigned as follows:
Your lowest two quiz scores will be dropped (this means that the other quizzes will be worth a slightly larger percentage of your final grade).

If you take all three exams, your lowest midterm score will be replaced by your score on the final exam, or you will receive a 2% bonus to your semester grade (whichever results in the highest grade).

There will be two (small) extra credit problem sets on WeBWorK throughout the semester. If you complete these problem sets, they will be used to improve your exams scores, up to a maximum of 100%.

For clarity: The replacement or the 2% boost (but not both) will be applied first, followed by the extra credit.

Example: If your Midterm Exam 1 score is 84/100 (after the replacement or 2% boost is applied), and if you complete one of the extra credit problem sets (most likely worth 5 points), your Midterm Exam 1 score will instead become 89/100 (up to a maximum of 100/100).

Grades will be posted on Canvas.

Calculators

Calculators will not be required for the course, nor will they be allowed on quizzes or exams.

Important Dates

8/24: Classes begin
8/30: Last day to add classes without a permission code
9/4: Last day to add a class, drop a class without being charged tuition, elect the CR/NC option, or audit a class
10/23: Last day to withdraw from classes (must pay tuition)
12/4: Last day to reverse CR/NC option
12/10: Classes end
12/15: Final exam (LCB 219, 6–8 pm)

See the Academic Calendar for a complete list:

[http://registrar.utah.edu/academic-calendars/]
Strategies for success:

• Attend class, and ask questions—being engaged helps you learn.
• Read the current section of the textbook before class. Read over your notes after class.
• Print your homework (free printing for math and physics in the computer lab), read through the assignment (including directions!), work out the answers on paper, and then sit down in front of a computer and enter your answers.
• Missing quizzes will affect your grade. Know when quizzes and exams will be held. Know how to compute your grade.
• Form study groups with other students. Working in groups helps students self-evaluate what they know and what they do not know.
• Cramming does not work. Study regularly and often throughout the semester. Focus on understanding the material rather than memorizing formulas.
• Ask for help during office hours, at the Tutoring Center, or from your classmates. Please do not be shy to ask questions during and after lectures, to come by during office hours, or to e-mail me with any concerns.

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 Services (CDS), 162 Olpin Union Building, 581-5020 (V/TDD). CDS will work with you and me to make arrangements for accommodations. All information in this course can be made available in alternative format with prior notification to CDS.

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. You 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, collusion, fraud, theft, etc. Students should read the Code carefully and know you are responsible for the content. According to Faculty Rules and Regulations, it is the faculty responsibility to enforce responsible classroom behaviors, beginning with verbal warnings and progressing to dismissal from class and a failing grade. Students have the right to appeal such action to the Student Behavior Committee.

Link to student code: [http://regulations.utah.edu/academics/6-400.php](http://regulations.utah.edu/academics/6-400.php)

Disclaimer

This syllabus is a preview of the course. I have aspired to make it as accurate as possible. However, I reserve the right to make reasonable changes to the above policies as I deem appropriate. Any such changes will be announced in class and by email.

Have a great semester!