

Math 20E
Vector Calculus
Fall 2021 Syllabus (Lecture A00)

Instructor: Brian Tran (b3tran@ucsd.edu)

Instructor Office Hours: W 9 – 10 am, Th 11 am – 12 pm (see Canvas for Zoom info)

TAs: Kehan Long (A01, A02, A07, A08, k3long@ucsd.edu)

Shubhankar Sahai (A03, A06, ssahai@ucsd.edu)

Soumya Ganguly (A04, A05, s1gangul@ucsd.edu)

TAs' Office Hours: See Page 2 of the Course Schedule

Grader: Carol Zhang (yiz043@ucsd.edu)

SI Leader: Sirius Song

SI Session Times: MW 6 – 7:20 pm

Credit Hours: 4

Website: We will have two course websites: [Canvas](#), as well as <http://www.math.ucsd.edu/~b3tran/courses/math20e.html>. You are responsible for checking both regularly for announcements, assignments, etc.

Prerequisite: MATH 18 or MATH 20F or MATH 31AH and MATH 20C (or MATH 21C) or MATH 31BH with a grade of C– or better.

Catalog Description: Change of variable in multiple integrals, Jacobian, Line integrals, Green's theorem. Vector fields, gradient fields, divergence, curl. Spherical/cylindrical coordinates. Taylor series in several variables. Surface integrals, Stokes' theorem. Gauss' theorem. Conservative fields

Textbook: J. E. Marsden, A. J. Tromba. *Vector Calculus, 6th Edition*. Published by W. H. Freeman and Company, 2012.

Material: We will cover certain parts of chapters 4, 5, 6, 7, and 8 of the text (see the course schedule for a more detailed breakdown). Note that I will also add material that is not necessarily in the text, so it is essential to attend/watch lectures, as well as reading the corresponding sections in the textbook (it is beneficial to read the textbook section before the corresponding lecture, as well as review it afterward). This is considered part of your responsibility in taking this course.

Lecture: MWF 8:00 am – 8:50 am. Lectures will be given in-person at WLH 2001. Lectures will also be podcasted with video and audio recording so that synchronous attendance is not required for lectures, although encouraged (podcasts can be found at https://podcast.ucsd.edu/watch/fa21/math20e_a00). Please feel free to ask questions at any time during lecture. You may feel intimidated to ask a question, but you and your peers will benefit from you asking, so please ask.

Discussion Section: Tuesday (time depending on section number). Discussion sections are useful for discussing material and asking questions (e.g., about the lecture material or about the homework) directly with your TA. Attendance is not required for discussion, although encouraged. You may attend any discussion section A01-A08.

Office Hours: My and your TAs' office hours allow us to engage with you directly. These are here for your benefit, and you are highly recommended to make use of these resources. Attendance for office hours is not strictly required, although encouraged. If you cannot attend our listed office hours, feel free to email me or your TAs and we can schedule an appointment at a different time.

Homework: There will be 9 homework sets, due each week on Wednesday at 11:59 pm. No late submissions will be accepted. The homework sets will be posted to both course websites and to Gradescope. The homework sets will consist of both textbook problems as well as problems that I will write; you are encouraged to discuss homework problems with me and your TAs during office hours and discussion sections. You may refer to your textbook (but do not plagiarize). However, you may not discuss or share answers with your peers, since working through the homework yourself is a fundamental part in learning the course material. Submitted homework must be your own original work. Make sure to include your full name, PID, and show all of your work. You will submit your homework on [Gradescope](#); after it is graded, you will be able to view the grade as well as any comments on Gradescope. There are two methods in which you can write and submit your homework:

- You can write out your solutions using a pen and paper. Subsequently, scan your work and submit it as a PDF file. If you choose this method, make sure that your work is neat and legible, as it is your responsibility to make sure that your work is readable by the grader. Alternatively, if you have a tablet and stylus, you can write out your solutions digitally, save your work as a PDF and submit it this way.
- You can type out your solutions electronically, with whichever software that you prefer (as long as the software has the capability of creating mathematical text and you must submit the file as a PDF). Two common choices are: Microsoft Word (using the Insert > Equations option for mathematical text; make sure to save your document as a PDF before submitting) and LaTeX. LaTeX is a typesetting software which allows you to create professional mathematical documents; it may seem difficult at first (its structure is similar to coding) but in my opinion, it is a worthwhile skill to learn, especially if you plan on continuing your career in the mathematical sciences. I have created a LaTeX homework template that you can use for your homework, if you'd like (see the course websites).

Exams: There will be two midterms; each midterm will be a 90-minute timed online exam. The midterms will be available to be viewed at the below dates on Gradescope. The exams will be available to be viewed on Gradescope for 12 hours from 12 pm in the afternoon to 11:59 pm midnight. Once you view the exam, the 90-minute timer begins; thus, for the full 90-minute time on the exam, begin the exam before 10:30 pm. You will have 90 minutes to complete, scan, and upload your exam to Gradescope. You should use about 80 minutes to work on the exam and 10 minutes to scan and upload the exam. You can write out your solutions using pen and paper and scan it to submit as a PDF, or if you have a tablet and stylus, you can write out your solutions digitally, save it as a PDF, and submit it this way. You are allowed to have a single sheet of notes (two-sided) for each midterm, but you may not use any other resources such as the textbook, calculators, or outside communication. Any form of academic dishonesty will be reported to the Academic Integrity Office.

The final exam will be a 180-minute proctored exam (tentatively in-person, but this may be changed to be proctored remotely through Zoom). You may bring two sheets of notes for the final, but no other resources will be allowed.

All exams are cumulative, in that they will require material covered up to that point in the course.
Exam dates:

- Midterm 1: Week 5, Monday 10/25/21. Available on Gradescope 12 pm – 11:59 pm.
- Midterm 2: Week 8, Monday 11/15/21. Available on Gradescope 12 pm – 11:59 pm.
- Final: Finals Week, Monday 12/06/21, 8 am – 10:59 am. WLH 2001 (in-person).

Exam Regrade Policy: After receiving the grade for your exam on Gradescope, you can request a regrade on Gradescope for a given period of time. For a regrade request, we reserve the right to deduct or add points, so make sure that you are confident in any errors in grading.

Grading Policy: The course grade consists of the homework (30%) with the lowest homework dropped, Midterm 1 (20%), Midterm 2 (20%), and the Final (30%). If your final exam score is higher than one of your midterms, the lowest midterm will be dropped and your final exam will be weighted 50% instead. The grade scale will be:

A+	A	A-	B+	B	B-	C+	C	C-
97	93	90	87	83	80	77	73	70

I reserve the right to adjust this scale to be more lenient if warranted by the overall class performance.

Administrative Deadline: It is your responsibility to ensure that your exam and homework grades are correctly recorded on Gradescope. Contact your TA before the last week of instruction to resolve any errors.

Academic Integrity: Academic integrity is expected at UCSD and any academic dishonesty is a serious offense. Any students involved in academic dishonesty (including, but not limited to, utilizing outside resources, communicating, receiving, or sharing solutions) will face an administrative sanction, which may include a failing grade, suspension, or even expulsion. Please uphold your academic integrity; any academic dishonesty only undermines your and your peers' education. For more regarding academic integrity, please see UCSD's [Academic Integrity Website](#).