Math 32A

Jack Sempliner

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1 Instructor Info

1. Jack Sempliner

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3. Office: Mathematical Sciences 6304

Feel free to contact me with any questions or concerns about the course!

2 Course Details

2.1 Course Schedule

The course will meet Monday, Wednesday, and Friday (MWF) from 10:00 AM-10:50 AM in Bunche 1209B.

2.2 Final Exam

The final exam will be held on Monday, December 8, 2025 from 11:30AM-2:30PM, at a location which will be announced on the course website on the Monday of 9th week. You may bring a "cheat sheet" consisting of a single sheet of A4 or U.S. letter paper with hand-written notes (double sided if you'd like) to the final. The final exam will be cumulative.

There will be no makeup final. In particular, the university policy requires that a student who has an undocumented absence from the final exam be given a failing grade in the course. If you anticipate being unable to attend the final exam for a legitimate reason, please inform the me as soon as possible.

2.3 Office Hour

There will be an office hour in my office from 3-4 PM every Thursday from week 1 onward. If we find that this date/time is unacceptable for a critical mass of students or there is too much attendance I may create another office hour, and the location may change to a larger room.

2.4 Discussion Sections

The discussion sections are listed below, along with the names of the corresponding TA's.

1. Hyunsik Chae: 2A and 2B in Boelter 5280

2. Tomoki Oda: 2C and 2D in Bunche 3143

3. Samuel Quenell: 2E and 2F in Bunche 3156

Please attend your assigned discussion section for the first two weeks of class and for all quizzes. After the add/drop period ends you may move around discussion sections if you'd like, as long as there is no quiz on that day.

2.5 Textbook

The textbook for the class is *Calculus: Late Transcendentals, Multivariable* (Fourth Edition) by Rogawski, Adams, and Franzosa. The book covers almost everything in the course (although occasionally from a different perspective than that of the course). You are encouraged to use the book's approach to complement the course's perspective on the material.

2.6 Course Outline

Here is a list of topics covered in the course and the weeks in which those lectures will occur in the class, along with the corresponding sections of the textbook for reference (when available). This schedule is subject to change but we'll follow the rough outline.

1. Week 1: vectors in the plane; vectors in three dimensions; the scalar product (13.1-13.3).

2. Week 2: the cross product; analytic geometry in three-dimensional space, planes; parametric equations (13.3-13.5, 12.1).

3. Week 3: Vector-valued functions; calculus with vector valued functions; arc-length and speed (14.1-14.3).

4. Week 4: Midterm I; curvature; kinematics in three dimensions (14.4-14.5).

5. Week 5: Introduction to planetary motion; Kepler's laws; functions of two variables (14.5-14.6, 15.1).

6. Week 6: Functions of several variables; limits and continuity; partial derivatives (15.1-15.3).

7. Week 7: More partial derivatives; tangent planes; Midterm II (15.3-15.4).

8. Week 8: Gradients and directional derivatives; more gradients and directional derivatives; the chain rule in several variables (15.5-15.6).

9. Week 9: Optimization problems (15.7); no class on Friday for Thanksgiving.

10. Week 10: Lagrange multipliers and constrained optimization, final review (15.8).

3 Homework

Homeworks will be posted each Sunday evening starting the Sunday before week 1, they will be due the Monday of the following week (for instance the homework for week 1 will be posted Sunday, September 28, 2025, and due by 11:59 PM Monday, October 6, 2025). Homework will be turned in on gradescope.

Homework will be 10% of your grade, and your lowest homework assignment will be dropped. **No late homework will be accepted.** Each homework will be graded out of 10 points, with 3 randomly selected questions being graded from each assignment, worth 2 points each. The remaining 4 points will be allocated based on the completion of the assignment without being scrutinized closely to see if the answers are correct. There will be around 8-15 problems per week from the relevant section of the textbook.

You are allowed to use calculators and the internet to solve the homework problems (whereas these resources will *not* be available to you for the other graded components of the course), however I would strongly recommend you avoid using AI or simply reading the answers by other means, the homework is your best means for tracking your own progress and practicing the problem-solving skills which are relevant to the exams.

4 Midterms

There will be two midterms, taken in class. The first will be on the Monday of week 4 (Oct. 20th), the second on the Friday of week 7 (Nov. 14th), both will be taken in class. The lowest midterm can be dropped if necessary, see the final grade section. As such there will be **no makeup midterms**. You may bring a "cheat sheet" consisting of a single sheet of A4 or U.S. letter paper with hand-written notes (double sided if you'd like) to the midterm exams. The midterms are not intended to be cumulative, however due to the nature of the course much of the later material depends on fluency with the earlier material.

5 Quizzes

There will be 3 quizzes, one on week 3, one on week 6, and one on week 10 (due to Thanksgiving) to be taken as part of discussion section. You will be allocated 20 minutes for each quiz. Quizzes will comprise 20% of your final grade all together. The lowest quiz grade will be dropped, as such **there will be no makeup quizzes**. You may bring a "cheat sheet" consisting of a 3 inch by 5 inch index card with hand-written notes (double sided if you'd like) to the quizzes. The quizzes are not intended to be cumulative, however due to the nature of the course much of the later material depends on fluency with the earlier material.

6 Final Grade

The final grade will be, summing up the above:

1. Homework: 10%

2. Quizzes: 20%

3. Midterms: 40% (20% each)

4. Final: 30%.

In addition, filling out the course evaluation at the end of the quarter will be worth a small 2% extra credit bonus.

In the event that you need to drop a midterm I will reweight the grades as

1. Homework: 10%

2. Quizzes: 20%

3. (Highest) Midterm: 30%

4. Final: 40%.

You do not need to manually ask to drop a midterm, I will automatically assign you the maximum of these two grades. Grading will be uncurved. Roughly one should expect that a final grade of 90% or higher ensures an A- in the low range, and otherwise an A, a grade of at least 80% ensures at least a B-, and so on. On the other hand I reserve the right to lower these cutoffs based on the class's performance.

7 Phones and Other Technology

If your electronic devices disrupt any invigilated component of the course (e.g. Midterms, Quizzes) you will be given a zero on that component of the course. If you forget to silence your phone and it rings once this is of course acceptable, but if it repeats and becomes a problem for the administration of the quiz/exam/etc. you will be given a zero. It goes without saying that electronic devices are not to be used during graded portions of the course, and you must silence them during lectures and discussion sections.

8   Academic Integrity

The instructor strongly adheres to the University policies regarding principles of academic honesty and academic integrity violations, and will strictly enforce these rules. You are encouraged to review those in the UCLA Student Conduct Code.

9   Disability Accommodation

Any student requesting academic accommodations based on a disability is required to register with the Center for Accessible Education.