



Table of Contents > General > Syllabus

Syllabus



Math 125 Fa24

Calculus I

The content of this syllabus is subject to change.

Section	Time	Location
39480	MWF 1-1:50pm	MHP B7B
38486	MWF 2-2:50pm	SOS B4

Instructor Table

Instructor	Email	Office Hours Location
Prof Geske	geske@usc.edu	KAP 244A
Ruoyu Zheng	ruoyuzhe@usc.edu	Math Center (KAP 263)
Ben Ingimarsen	ingimars@usc.edu	Math Center (KAP 263)

Course Materials

The textbook is recommended but not required.

Textbook	Author	Edition
Essential Calculus	Stewart	2nd

Course Structure

This course is broken up into Unit A, Unit B, and Unit C. Each unit consists of 5 topics. For a total of 15 topics. There is also a topic that is exclusive to the final.

Topic	Name	Description
		Can decide when a limit involving a function exists using its graph and evaluate the limit if it does exist. Can decide when a limit

A1	Basic Limits	involving a function exists using its formula and evaluate the limit if it does exist using algebraic simplification or known trig limits or the squeeze theorem and/or analysis of a piecewise-defined function.
A2	Special Trig Limits and Continuity	Can compute limits related to the limit of $(\sin x)/x$ as x approaches 0. Can decide when a function is continuous using its graph or its formula. Can apply the intermediate value theorem to answer questions that (indirectly) ask about roots of functions.
A3	Limits and Infinity	Can evaluate infinite limits or limits at infinity using function graphs. Can evaluate infinite limits or limits at infinity using function formulas and algebraic simplification. Can relate infinite limits or limits at infinity to vertical or horizontal asymptotes.
A4	Differentiability and Linearization	Can interpret derivatives as a rate of change. Can use the limit definition to decide whether a function is differentiable at a point and can use the limit definition to find the derivative at that point if so. Can relate the derivative at a point to the tangent line and can use that tangent line to (indirectly) approximate function values
A5	Derivative Rules	Can find function derivatives using the sum/difference rules and constant multiple rule and product rule and quotient rule and chain rule and then evaluate those derivatives at points if needed.
B1	Higher Derivatives and Implicit Differentiation	Can find the derivative of an implicitly defined function at a point if needed and use it approximate points on the graph of the implicitly defined function.
B2	Related Rates	Can convert a word problem involving rates of change to a problem involving mathematics quantities and their derivatives and can find the unknown quantity and correctly interpret its units.
B3	Curve Sketching	Can use the first and second derivatives to assess graph shape and identify local extrema. Can make a graph sketch based on this data.
B4	Global Graph Behavior	Can locate absolute extrema of functions. Can apply the Rolle's theorem to answer questions about roots of function. Can apply the mean value theorem to answer questions about the values of a function or its derivative.
B5	Optimization	Can convert a word problem involving finding an optimal value into a problem involving find an absolute extremum of a one variable function on an interval then can solve that problem and relate it back to the original word problem.
C1	Definite Integrals and Riemann Sums	Can find exact and approximate values for integrals by interpreting them in terms of Riemann sums and areas.
C2	Antiderivatives and Fundamental	Can explain the relationship between antiderivatives and integrals and can use those relationships to compute derivatives or

	Fundamental Theorem	integrals.
C3	Substitution	Can compute integrals using the method of substitution.
C4	Inverses	Can decide whether a function is one to one and can find the inverse and derivative of its inverse if so.
C5	Log and Exp	Can compute limits derivatives or implicit derivatives. of functions involving the natural log and the natural exponential or general log or general exponentials.
Bonus	Exp Growth and Decay	Can construct and use exponential models to solve word problems.

See the Daily Schedule for a day-by-day breakdown of our progression through the units.

Grading is broken up into Homework, Topic Mastery, and the Final Exam.

Category	Weight Total	Quantity of Items in Category	Weight Per Item
Homework	10%	[12 HWs - lowest 2 dropped] = [10 counted HWs]	1% per HW
Topic Mastery	60%	15 topics	4% per topic
Final Exam	30%	1 exam	30%

Homework

Homework will be due every Saturday at 11:59pm except for the first Saturday and on holiday Saturdays.

Homework Guidelines. Although we encourage you to discuss the homework with your peers, you must write your own solutions to the problems. If in doubt, you should be able to explain the details of your thought process if requested.

You must show your work. You will not receive credit for final answers without work.

Write legibly. You may not receive credit for work that is illegible or unintelligible.

Ensure your submissions are properly oriented (e.g. not sideways). Use the Gradescope feature that attaches problems to pages in your submission as shown in this [link](#).

Homework Grading. 5 problems will be randomly selected from each assignment and be graded for correctness out of 2 points each. Therefore each homework will be worth 10 points.

Homework Extensions. You will be allowed 3 24-hour extensions on assignments. To receive a 24-hour extension, you must email a request to your instructor. No other extensions will be granted. Beyond this allowance late homework will not be accepted.

Contribution to Final Grade. Homework counts for 10% of your final grade. Your lowest 2 homework grades will be dropped. Therefore each non-dropped homework contributes 1% to your final grade.

Topic Mastery

There are 15 topics (A1-A5, B1-B5, C1-C5) which were listed earlier in the syllabus.

Individual Topic Grading. Each topic is graded out of 4 points. 4 points indicates mastery. Topic grading will be assessed using Midterms and Retakes.

Date	Assessment	Time	Location
Mon Sep 30	Midterm A	Your Lecture Time	Your Lecture Classroom
Tue Oct 15	Retake \leq A	Your Discussion Time	Your Discussion Classroom
Mon Oct 28	Midterm B	Your Lecture Time	Your Lecture Classroom
Tue Nov 12	Retake \leq B	Your Discussion Time	Your Discussion Classroom
Mon Nov 25	Midterm C	Your Lecture Time	Your Lecture Classroom
Thu Dec 5	Retake \leq C	Your Discussion Time	Your Discussion Classroom

Each Midterm is tied to a unit and will have a single problem (with parts) for each each topic in that unit. For example Midterm A is tied to Unit A and will have A1, A2, A3, A4, and A5 problems. Each problem will be graded out of 4 points, indicating your score on that topic.

Each Retake is tied to all units up to that point and will have a single problem (with parts) for each topic in that unit. For example Retake \leq B is tied to Unit A and Unit B and will have A1, A2, ..., A5, B1, B2, ..., B5 problems. Each problem will be graded out of 4 points, indicating your score on that topic.

Your final score on a topic will be the maximum of your scores on each assessment. For example if your scores on A3 were [A3 on Midterm A: 1 points] and [A3 on Retake \leq A: 2 points] and [A3 on Retake \leq B: 3 points] and [A3 on Retake \leq C: 2 points] then your final score on A3 would be 3 points, as this was the maximum of your scores. Note that this means, if you ever score 4 points on a topic in an assessment, then you are effectively done with that topic, at least until the final exam.

Midterm and Retake Guidelines. Calculators are **not** allowed on any Midterms or Retakes. You will be allowed a both sides of single handwritten 3 in by 5 in notecard on Midterms and Retakes.

Contribution to Final Grade. Topic Mastery counts for 60% of your final grade. Therefore each topic contributes 4% to your final grade.

Final Exam

There is a shared cumulative final exam for all students taking Math 125 at the university.

Date	Time	Location
Dec 11	2-4pm	TBA

It is university policy that no student may take this exam early or be allowed to skip it.

Final Exam Guidelines. Calculators are **not** allowed on any Midterms or Retakes. You will be allowed both sides of single handwritten standard sheet of paper on the Final Exam.

Class Recording

Lectures will be recorded regularly and those lectures posted on Brightspace.

Discussion Section

Attending and participating in discussion section is essential for success in the course.

In discussion section you will have the opportunity to work through additional problems related to the topics with the help of the TAs. This will also be an opportunity for you to receive help on the homework from your TA. You will also take your retakes in discussion section.

Office Hours

These are an essential resource that often go underutilized. We encourage you to attend them to receive help on any aspect of the course.

Math Center

The USC Math Center (KAP 263) is a place to go if you want help with your math classes. Please visit the Math Center [website](#) for more information

Academic Integrity

The University of Southern California is foremost a learning community committed to fostering successful scholars and researchers dedicated to the pursuit of knowledge and the transmission of ideas. Academic misconduct is in contrast to the university's mission to educate students through a broad array of first-rank academic, professional, and extracurricular programs and includes any act of dishonesty in the submission of academic work (either in draft or final form).

This course will follow the expectations for academic integrity as stated in the [USC Student Handbook](#). All students are expected to submit assignments that are original work and prepared specifically for the course/section in this academic term. You may not submit work written by others or "recycle" work prepared for other courses without obtaining written permission from the instructor(s). Students suspected of engaging in academic misconduct will be reported to the Office of Academic Integrity.

Other violations of academic misconduct include, but are not limited to, cheating, plagiarism, fabrication (e.g., falsifying data), knowingly assisting others in acts of academic dishonesty, and any act that gains or is intended to gain an unfair academic advantage.

The impact of academic dishonesty is far-reaching and is considered a serious offense against the university and could result in outcomes such as failure on the assignment, failure in the course, suspension, or even expulsion from the university.

For more information about academic integrity see the [student handbook](#) or the [Office of Academic Integrity's website](#), and university policies on [Research and Scholarship Misconduct](#).

Course Content Distribution and Recording Policies

USC has policies that prohibit recording and distribution of any synchronous and asynchronous course content outside of the learning environment.

Recording a university class without the express permission of the instructor and announcement to the class, or unless conducted pursuant to an Office of Student Accessibility Services (OSAS) accommodation. Recording can inhibit free discussion in the future, and thus infringe on the academic freedom of other students as well as the instructor. ([Living our Unifying Values: The USC Student Handbook](#), page 13).

Distribution or use of notes, recordings, exams, or other intellectual property, based on university classes or lectures without the express permission of the instructor for purposes other than individual or group study. This includes but is not limited to providing materials for distribution by services publishing course materials. This restriction on unauthorized use also applies to all information, which had been distributed to students or in any way had been displayed for use in relationship to the class, whether obtained in class, via email, on the internet, or via any other media. ([Living our Unifying Values: The USC Student Handbook](#), page 13).

Students and Disability Accommodations

USC welcomes students with disabilities into all of the University's educational programs. [The Office of Student Accessibility Services](#) (OSAS) is responsible for the determination of appropriate accommodations for students who encounter disability-related barriers. Once a student has completed the OSAS process (registration, initial appointment, and submitted documentation) and accommodations are determined to be reasonable and appropriate, a Letter of Accommodation (LOA) will be available to generate for each course. The LOA must be given to each course instructor by the student and followed up with a discussion. This should be done as early in the semester as possible as accommodations are not retroactive. More information can be found at osas.usc.edu. You may contact OSAS at (213) 740-0776 or via email at osasfrontdesk@usc.edu.

Support Systems

[Counseling and Mental Health](#) - (213) 740-9355 24/7 on call

Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

[988 Suicide and Crisis Lifeline](#) - 988 for both calls and text messages 24/7 on call

The 988 Suicide and Crisis Lifeline (formerly known as the National Suicide Prevention Lifeline) provides free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week, across the United States. The Lifeline is comprised of a national network of over 200 local crisis centers, combining custom local care and resources with national standards and best practices. The new, shorter phone number makes it easier for people to remember and access mental health crisis services (though the previous 1 (800) 273-8255 number will continue to function indefinitely) and represents a continued commitment to those in crisis.

[Relationship and Sexual Violence Prevention Services \(RSVP\)](#) - (213) 740-9355 (WELL) - 24/7 on call

Free and confidential therapy services, workshops, and training for situations related to gender- and power-based harm (including sexual assault, intimate partner violence, and stalking).

[Office for Equity, Equal Opportunity, and Title IX \(EEO-TIX\)](#) - (213) 740-5086

Information about how to get help or help someone affected by harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants.

[Reporting Incidents of Bias or Harassment](#) - (213) 740-5086 or (213) 821-8298

Avenue to report incidents of bias, hate crimes, and microaggressions to the Office for Equity, Equal Opportunity, and Title for appropriate investigation, supportive measures, and response.

[The Office of Student Accessibility Services \(OSAS\)](#) - (213) 740-0776

OSAS ensures equal access for students with disabilities through providing academic accommodations and auxiliary aids in accordance with federal laws and university policy.

[USC Campus Support and Intervention](#) - (213) 740-0411

Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

[Diversity, Equity and Inclusion](#) - (213) 740-2101

Information on events, programs and training, the Provost's Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.