

Introduction to analysis (Math 131A), Spring 2018
San José State University
MacQuarrie Hall 235, MW 10:30–11:45am (Sec. 02, code 26208)

Instructor: Dr. Tim Hsu (pronounced “shoe”).

Office and phone: MacQuarrie Hall 419, (408)924-5071.

Office hours: MW 9:00–10:30; M 2:00–3:00; W 1:30–3:00. Current schedule available at:
<http://www.math.sjsu.edu/~hsu/courses/generic/sched.pdf>

E-mail: tim.hsu@sjsu.edu. I can be reached by e-mail at many times of the day, and will try to respond within 24 hours.

Course web page: <http://www.math.sjsu.edu/~hsu/courses/131a/>

Required text: *Elementary Analysis: The Theory of Calculus*, Ross (2nd ed., 2013, blue and yellow cover).

Optional texts: *Writing Proofs*, Hsu, downloadable from course web page.

Grading: Your semester grade consists of: Homework 20%; Exam 1 14%; Exams 2 and 3 18% each; Final exam 30%.

Goals of the course. In this course, we will examine two questions: (1) How can we be *sure* that calculus works? (2) What are the key properties that make the real numbers work? In answering those questions, we will encounter some of the deepest ideas of mathematics, including *convergence*, *continuity*, and *topology*.

Prerequisites. Besides the formal prerequisites (Math 32 and 108), you need to realize that this course is one of the most difficult undergraduate courses we offer. If you have never taken a course in which you spent most of your time writing proofs, you must talk with me immediately, and at least take Math 108 this semester as a co-requisite.

Class is a cell-free zone. Please turn off all cellphones before you get to class.

Homework. Homework will be due roughly once a week, with an outline of problem set 01 due **Wed Jan 31**, with problem set 01 due **Mon Feb 05**. For more details on homework content and the process of doing homework (including outlines and revisions), see the handout on homework.

Specific homework assignments will be determined as the term progresses. For a complete list of all homework assigned to date, and downloadable versions of almost all handouts from class, you can always check the course web page.

Problem sessions. In addition to my regular office hours, starting on **Fri Feb 02**, I will also hold problem sessions for this class every **Fri**, at a time and a place to be announced. These sessions are completely optional, and you should be fine without them, but the time is available for those who can make it.

Checkins. Because we only meet on two days each week, it is *crucial* that you do substantial independent work in the long gap between Wed and Mon. To that end, I will require you to “check in” with me each week in that time period. See the handout on check-ins for more details.

Exams. We will discuss this topic in more detail before the first exam, but briefly, the material on exams will mostly resemble the material from the homework. All exams are closed-book.

Calculators. You will *not* be allowed to use calculators for *any* in-class exams. The numerical work on exams will be simple enough that a calculator shouldn’t be necessary, and even if you make numerical mistakes, you won’t lose a lot of points on them.

Exam dates. The dates of our three in-class exams and final exam are found on the syllabus below. In particular, the final exam will be held on **Mon May 21**, from **9:45am–noon**. Please make sure that you are still on campus at that time (e.g., don’t buy a plane ticket that leaves town on May 20).

How to add this course. If you are not registered for this course, and you would like to add it, you must first put a full effort into completing all of the work in the course. Second, if you are a graduating senior, you need to produce documentation to verify that.

I'll make a waiting list, which you get on by filling out and turning in the information form for the course. I'll give out add codes starting **Mon Feb 05** (or possibly earlier), mainly based on completeness of homework, and as long as there is room, I will continue to give out add codes until add date (**Mon Feb 12**). Note, however, that graduating seniors have the highest priority, and that Open University students have the lowest priority.

How to drop this course. Until **Mon Feb 05**, you can drop at my .sjsu.edu. Nothing will appear on your transcript, but please let me know if you drop.

To drop after Mon Feb 05, you must go to the student services center and submit a Course Drop form to the Director of Academic Services. Dropping under these circumstances is only allowed for "serious and compelling reasons" (course catalog). A low grade is not a serious and compelling reason.

Academic integrity. Your commitment to learning (as shown by your enrollment at SJSU) and SJSU's Academic Integrity Policy require you to be honest in all of your academic course work. Faculty are required to report all infractions to the Office of Student Conduct and Ethical Development. See: www.sjsu.edu/studentconduct

Disabilities. If you need course adaptations or accommodations due to a disability, or if you need special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. Presidential Directive 97-03 requires that students with disabilities register with the Accessible Education Center (formerly the Disability Resources Center) to establish a record of their disability.

Tenative syllabus

Date	Reading	Date	Reading
Wed Jan 24	Sects. 1-3	Mon Mar 26	SPRING BREAK
Mon Jan 29	Sect. 4	Wed Mar 28	NO CLASSES
Wed Jan 31	Sect. 5	Mon Apr 02	Sect. 19-20
Mon Feb 05	Sect. 7	Wed Apr 04	Sect. 20
Wed Feb 07	Sect. 8	Mon Apr 09	Sect. 28
Mon Feb 12	Sect. 9	Wed Apr 11	Sect. 29
Wed Feb 14	Sect. 9	Mon Apr 16	Sect. 32
Mon Feb 19	Sect. 10	Wed Apr 18	Sect. 33
Wed Feb 21	Exam 1	Mon Apr 23	Sect. 34
Mon Feb 26	Sect. 11	Wed Apr 25	Exam 3
Wed Feb 28	Sect. 12	Mon Apr 30	Sect. 23
Mon Mar 05	Sect. 14	Wed May 02	Sect. 24
Wed Mar 07	Sect. 15	Mon May 07	Sect. 25
Mon Mar 12	Sect. 17	Wed May 09	Sect. 26
Wed Mar 14	Sect. 17	Mon May 14	Review
Mon Mar 19	Sect. 18	Mon May 21	Final exam,
Wed Mar 21	Exam 2		9:45am-noon