Math 130B – Functions of a Real Variable

Spring 2024

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Office: Brighton 125
Office Hours: Tuesdays 10-11am, Wednesdays 12-1pm, Thursdays 1:30-2:30pm, or by appt.
Lectures: TuTh 12-1:15pm, ALP 231

Text: There is no required or official textbook for this course. We will roughly be covering Chapters 7-9 of Real Analysis: A Long-Form Mathematics Textbook by Jay Cummings, which is inexpensive and an excellent companion to this course; I strongly recommend buying a copy. I have also posted two supplementary texts on Canvas: one is free and one is not. No assignments will come from any book: I will type them up and post them to Canvas.

Grading: Homework 10%, Special Assignments 10%, Midterms 40%, Final 40%. This is an approximation. Letter grades will be determined by a curve at the instructor's discretion. My grading philosophy is explained in another document.

Exams: There will be three midterms, each worth about 13% of your final grade. No notes, books, electronic devices, or bathroom breaks will be permitted during any exam. Exam make-ups will be permitted only in the case of a documented emergency. Midterm dates will depend on our progress, but will be announced at least one week before the exam; probably weeks 5, 9, and 13. The final will be comprehensive and held Tuesday, May 14, 12:45pm – 2:45pm.
If you pass the final, then you pass the class.

Homework: Weekly assignments will be posted to Canvas and will be due in class every Thursday. There is no penalty for late work, but manage your time wisely; I can help. Not all assigned problems will be graded. Exams will consist of mostly homework problems, perhaps slightly modified. *Struggling through homework problems is the best way to learn analysis and prepare for your exams. Plan to read my feedback carefully and redo problems often.*

Special assignments: These will be assigned occasionally throughout the semester. They are meant to help you learn analysis and prepare for exams in ways that normal homework problems cannot, sometimes by exploring richer problems and writing more polished proofs. Sometimes you will be allowed to work in groups if you choose. Homework policies apply.

Resources:

- I am your primary source for help with the material, but other resources are available, including your classmates.
- You can and should form study groups. You should read and critique each other's proofs.
- Other textbooks and websites can be helpful; just don't expect to learn much math by watching videos.
- I will regularly post helpful documents and links to Canvas.
- *I strongly recommend that you plan to attend my office hours as often as you can.* Building my office hours into your schedule is a very good idea; let me know asap if you can't make any of them.

Prerequisites: Grades of C- or better in Math 130A.

Catalog Description: Continuation of Math 130A. This semester will be devoted to a rigorous development of the theory of Riemann integration, infinite series, and sequences and series of functions.

Remarks: If you have a disability and require accommodations, you need to provide disability documentation to DAC, Lassen Hall 1008, and discuss your needs with me as soon as possible.

Cheating of any type will result in disciplinary action and an automatic fail. If you are unsure what constitutes cheating, please see Sac State's Academic Honesty Policy; I have provided a link on Canvas.

If you are experiencing challenges in the area of food and/or stable housing, Sacramento State offers basic needs support for students. Visit csus.edu/basicneeds.

University Policy Manual Course Syllabus Policy, Policy File Number ACA-170, Section VII Syllabi Required Elements:

A. Functions of a Real Variable. Math 130B. 3 units. Course Description: "Continuation of Math 130A. This semester will be devoted to a rigorous development of the theory of Riemann integration, infinite series, and sequences and series of functions." Department of Mathematics and Statistics. College of Natural Sciences and Mathematics.

B. Attendance is not required, except for exams and the first week of classes. Homework is accepted late.

C. This course adheres to the Academic Honesty Policy.

D. This course adheres to the Hornet Honor Code.

E. 1. Sacramento State is committed to ensuring an accessible learning environment where course or instructional content are usable by all students and faculty. If you believe that you require disability-related academic adjustments for this class, please immediately contact Disability Access Center (DAC) to discuss eligibility. A current accommodation letter from DAC is required before any modifications, above and beyond what is otherwise available for all other students in this class will be provided. 2. Your physical and mental health are important to your success as a college student. Student Health and Counseling Services (SHCS) in The WELL offers medical, counseling, and wellness services to help you get and stay healthy during your time at Sac State. SHCS offers: Primary Care medical services, including sexual and reproductive healthcare, transgender care, and immunizations; urgent care for acute illness, injuries, and urgent counseling needs; pharmacy for prescriptions and over-the-counter products; mental health counseling, including individual sessions, group counseling, support groups, mindfulness training, and peer counseling; athletic training for sports injury rehabilitation; wellness services, including nutrition counseling, peerled health education and wellness workshops, and free safer sex supplies; violence and sexual assault support services. Most services are covered by the Health Services fee and available at no additional cost. 3. If you are experiencing challenges with food, housing, financial or other unique circumstances that are impacting your education, help is just a phone call or email away. The CARES office provides case management support for any enrolled student.

F. You are welcome but not required to use technology in the classroom that assists with note-taking or problem solving, except during exams. Please do not record me or your classmates in any form without permission. Please refrain from using technology for non-academic purposes (games, social media) as it is distracting to your classmates.