

# Math 130A – Functions of a Real Variable

## Spring 2015

**Instructor:** Dr. Corey Shanbrom

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**Office:** Brighton 144

**Office Hours:** Monday 1:30-3pm and Thursday 12-1:30pm, or by appointment

**Prerequisites:** Grades of C- or better in Math 32 and Math 108. It is your responsibility to prove to me that you have met this prerequisite by the end of the first week; any student who fails to do so will be dropped.

**Text:** There is no required or official textbook for this course. We will roughly be following the structure of Basic Analysis: Introduction to Real Analysis, by Jiri Lebl. This book is a good reference but dense and fairly brief, with very few exercises. We will cover several topics which do not appear in the book, and we will also study some of the book's material in more depth.

Homework problem sets will come from Introduction to Real Analysis by William Trench. This book provides excellent exercises with selected solutions and hints, but is too large to serve as a handy reference.

Both of these books are available as free pdf files from the American Institute of Mathematics Open Textbook Initiative: <http://aimath.org/textbooks/>. I have provided links to downloads as well as pdf files of these books on SacCT. You can buy a paper copy of Lebl for \$12 at lulu.com. Trench is available in electronic form only.

**Grading:** Homework 25%, Midterms 30%, Final 30%, Special Assignments 15%, This is an approximation. Letter grades will be determined by a curve at the instructor's discretion. Detailed instructions for special assignments will be provided later in the semester. These may include papers, group work, or presentations.

**Exams:** There will be two midterms, each worth about 15% 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. The final will be comprehensive and held Wednesday, May 20, 10:15am – 12:15pm.

**Homework:** Problems from the textbook will be assigned every lecture and will be due in class every Friday. Problems assigned on FMW are due the following Friday. Many problems will be assigned – only some will be graded. Exams will include HW problems. Late HW will be accepted at a penalty. Take your homework seriously --you will learn more by struggling with homework problems and reading my feedback than you will by sitting in class.

**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; these can meet in the Math Lab in Brighton 118. You should read each other's proofs. Also, other textbooks and websites (eg, Wikipedia, Mathworld, even Youtube) are helpful. I will regularly post helpful documents and websites to SacCT.

**Catalog Description:** First half of a one-year upper division course in functions of a real variable. The first semester will consist of a rigorous development of the theory of real-valued sequences and continuity and differentiation for functions of one real variable.

**Remarks:** If you have a disability and require accommodations, you need to provide disability documentation to SSWD, 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. This will show up on future background checks, grad school applications, etc. If you are unsure what constitutes cheating, please see Sac State's Academic Honesty Policy; I have provided a link on SacCT.