

Math 30 – Calculus 1

Fall 2013

Instructor: Dr. Corey Shanbrom

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Office Hours: Monday and Tuesday 12-1:30pm or by appointment

Prerequisites: Math 29 or four years of high school mathematics which includes two years of algebra, one year of geometry, and one year of mathematical analysis; completion of ELM requirement and a passing Calculus Readiness Test (CR) score. Enrollment in Math 30 (with a letter grade) in the previous semester is also acceptable. A CR score of 41 is passing; a score of 36-40 is advisory qualification and admission is left to the instructor's discretion. Any student who does not demonstrate a passing CR score by Monday, September 9 may not take this class.

Lectures: I am teaching two sections of Math 30; this syllabus applies to both.

Section 01: MWF 8-8:50am in Brighton 218 *and* Tu 8-8:50am in Brighton 202.

Section 04: MWF 10-10:50am *and* Tu 10:30-11:20am both in Brighton 201.

Text: Calculus, Early Transcendentals, James Stewart, 7th edition. This is the official text, but it is not necessary to succeed in this course. In fact, almost any other modern calculus book (including older editions of Stewart) will suffice. We will not be using any text directly, as this is a lecture-based course with online homework. However, I do recommend owning some calculus book for the nice pictures and worked examples. Further, we will be covering chapters 2-5 of Stewart and following the book's structure fairly closely. Reading ahead is highly recommended. Also note that future calculus courses may require the 7th edition of Stewart.

Grading: Homework 25%, Midterms 45%, Final 30%. This is an approximation. Letter grades will be determined by a curve at the instructor's discretion.

Exams: There will be three 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 as follows:

Section 01: Monday, December 16, 8-10am.

Section 04: Friday, December 20, 8-10am.

Homework: Homework answers are submitted and graded online, accessed through SacCT. All problems are multiple-choice. Detailed instructions appear on another document, entitled "Submitting Your Homework Using SacCT." Free SacCT training workshops are provided by IRT August 26-September 13, Monday-Thursday at 11am and 2pm. Paper copies of the problems will be handed out in class and due dates will be announced. You may also view problems and due dates via SacCT. Solutions to each

problem will be available immediately after submission. Completion of certain problems will require a basic calculator.

You must *also* turn in written work for each problem by the assignment's due date. I will skim this and provide some feedback on the quality and clarity of your work, as I would on an exam. You must submit written work to get full credit for the assignment. Late homework will be accepted at a penalty.

Resources: I am your primary sources for help with the material, but other resources are available. The Math Lab in Brighton 118 offers free drop-in tutoring from math majors, grad students, and sometime faculty. It is open M-Th 9am-6pm and F 9am-1pm. You can and should form study groups; these can meet in the Math Lab as well. Other textbooks and websites (eg, Wikipedia, Mathworld, even Youtube) are helpful. Further resources are detailed below.

Peer Assisted Learning (PAL) Sessions: There are optional adjunct sections (NSM 12E, Peer-Assisted Learning MATH 30) that students can take concurrently with Math 30.

These are offered Monday and Wednesday at 11am, 12pm, and 1pm. NSM 12E is a one-unit course, graded Credit/No Credit, which is facilitated by undergraduate students (PAL leaders) who have successfully mastered the material in Math 30. In these PAL sections, Math 30 students will work in small groups on worksheets dealing with the topics of Math 30. Spaces in NSM 12E are limited and are filled on a first-come first-served basis.

Even if you do not enroll in NSM 12E, you may still go to the PAL leader office hours for help. Office hours of the PAL leaders are held in SQU248 and the times will be announced when they become available. Times of office hours will also be posted outside the door of SQU 248.

Peer Assisted Student Success (PASS) Advising: PASS Advising is designed to help students at the first sign of struggle in the class. Students who are referred for PASS Advising will meet throughout the semester with a highly trained peer advisor whose goal is to make sure you are on the right track and have the resources (both academic and non-academic) to succeed in the course.

Students who are repeating the course, are on academic probation, or perform poorly on exams may be required to meet with a PASS advisor. Students referred to PASS Advising will receive an email from the PASS Advising Coordinator with information on how to make an appointment with a PASS Advisor.

Students who are referred to PASS Advising and who do not make and keep all of their appointments and/or who do not document completion of all requested PASS referrals will have a hold put on their registration for the next semester.

Catalog Description: Functions and their graphs; limits; the derivative and some of its applications; trigonometric and hyperbolic functions and their inverses; the integral; the fundamental theorem; some applications of the integral.

General Education:

GE Area: B4 (Mathematical Concepts and Quantitative Reasoning)

Writing Component: This class has a writing component. This means that you will have to write. On every exam you will find questions that require a paragraph or two explaining a concept, theorem, or method.

Learning Outcomes: Solve problems by thinking logically, making conjectures, and construction valid mathematical arguments. Make valid inferences from numerical, graphical, and symbolic information. Apply mathematical reasoning to both abstract and applied problems, and to both scientific and non-scientific problems.

Learning Objectives:

- Understand the definition of the derivative; use the definition to find the derivative of simple functions, and interpret the definition geometrically and in a variety of applied contexts including instantaneous velocity.
- Know the fundamental rules of differentiation including the chain rule and use these rules to compute the derivatives of rational, exponential, logarithmic, and trigonometric functions.
- Use limits and the derivatives to identify asymptotes, relative extrema, and inflection points of curves and apply these techniques to curves sketching.
- Know the Mean and Extreme Value Theorems and use these to locate zeros of functions and to solve optimization problems.
- Understand the indefinite integral as the inverse of differentiation, know the basic rules of integration, including substitution, and use these rules to evaluate elementary antiderivatives.

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.

There will typically be homework during the last week of class, despite any rumors otherwise.

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.