MATHEMATICS 1300-018: CALCULUS 1, FALL 2015 SYLLABUS

Class Meetings. MTWRF 9:00–9:50AM, ECCR 1B51

Instructor. Robert Hines, robert.hines@colorado.edu, math.colorado.edu/~rohi1040

Office Hours. MATH 340, Tues., Wed., Fri. 3:00–4:00PM or by appointment

Course Teaching Assistant. Alexander Nita

Course Learning Assistant. Callie Kellackey

Prerequisites: Minimum ALEKS placement score: 75. Two years of high school algebra, one year of geometry, and one half-year of trigonometry; **or** MATH 1150: Precalculus.

Textbook and WebAssign access: We will use the textbook "Calculus - Concepts and Contexts", 4th Edition, by James Stewart. You can purchase the textbook together with an access code to WebAssign (for online homework) directly from the publisher or from the CU Bookstore. If you purchase the textbook elsewhere, make sure you also buy access to WebAssign for as many semesters as you intend to continue in the calculus sequence. You can find more information about purchasing the textbook and a WebAssign access code on the course website.

Course website: The course website for all sections of MATH 1300 is `math.colorado.edu/math1300`. See the website for exam information, homework assignments, projects and activities, a link to WebAssign, the course schedule, lists of instructors and TAs, a copy of this syllabus, and links to additional resources.

Course structure: Research shows that people learn mathematics best when they are actively participating. In other words, you learn by doing, not by watching. Therefore, MATH 1300 does not meet in a large lecture hall, but instead meets in small sections, which allows individual and group work in which you will be actively engaged, solving problems, making discoveries and understanding connections.

This course is designed for a classroom which does not necessarily follow a traditional lecture format. Do not be surprised if your instructor often spends only half a class period at the board lecturing or solving problems. The rest of the time, you should expect to be working at your desk, either individually or in groups, or at the board, presenting your work.

In this vein, you will be expected to read a section in the book **before** it is discussed in class. Lectures are intended to highlight aspects of the text, not to replace it.

About Calculus: Roughly speaking, calculus is the mathematics of *change*. In particular, calculus is a powerful tool for understanding change in physical quantities and phenomena that *depend on*, or are *related to*, each other.

The dependence of a given quantity upon another (or others) is often described mathematically by a *function*. Thus, the heart of calculus *is* the study of functions, and how they change. Differential calculus studies the instantaneous change of a function as quantities vary, and integral calculus measures the cumulative effect of the change of a function.

Calculus has led to profound human achievements: initially created to solve basic geometric problems, it soon led to a nearly complete understanding of the motion of the planets. Nowadays calculus is applied constantly in mathematics, chemistry, economics, biology, psychology, physics, and every type of engineering. However, it need not be viewed only as a tool: it arose from human imagination and is capable of creating great beauty on its own.

In this course you will learn a number of useful formulas, though their mastery is not the primary purpose of calculus any more than correct spelling is the primary purpose of literature. Our goal is

to have you learn how to understand calculus conceptually so you can build your own approaches to solving practical problems.

Calculators and other technology: You are required to have an electronic device for in-class activities. You are required to bring it to class. The device you use should be capable of graphing functions and doing numerical integration. Acceptable devices are a calculator such as a TI-83 or better, a graphing calculator application for a smartphone, software packages such as Maple or Mathematica, and web sites such as Wolfram Alpha. **Absolutely no such devices will be allowed on exams or quizzes, nor will they be needed on exams or quizzes.**

Assignments and assessments: The only effective way to learn calculus is to do lots and lots of problems. Besides working on problems in class every day, you will have assignments and assessments in this course to enhance your skills and understanding.

Online homework: WebAssign is an online system for doing homework. When you log on, you are given problems that you solve on paper and then enter the answers. These problems are generally straightforward or computational, and you can repeat them multiple times until you get the correct answer. The philosophy behind this is that instantaneous feedback is more effective than waiting days for a grade, and that doing a problem over if it's wrong is better than simply seeing the right answer. Because problems are graded by a computer, there are occasional technical issues, but we believe the trade-off is worthwhile. WebAssign can be accessed through the link on the main course website.

If you registered for the course by August 20, then you should already have a WebAssign login. In this case, your username is the same as your Identikey username, and your password is your IdentiKey password. If you registered for the course after August 20, then you will need to email math-help@colorado.edu to get a WebAssign login. Include your full name, your CU email address, your Identikey username, and the course and section you are registered in.

There will be one WebAssign assignment for each section of the textbook, assigned when we begin that section. There will also be a short review assignment approximately once a week. Please check the due dates regularly, as you are responsible for getting the assignments done on time. The due dates can also be found on the course website schedule page. Assignments are generally due at 11:59 pm on the due date. No late WebAssign assignments will be accepted. However, we will allow you to miss 10% of the WebAssign problems for the semester with no penalty, so you don't need to panic if you miss a problem here and there.

You may email your instructor to ask about a WebAssign problem, but when you do, make sure to include "MATH 1300" in the subject line, give a clear statement of the problem you are trying to solve, say what you have already tried and why you think it should have worked. Ask your instructor for their particular policy regarding emailing questions.

Recitation projects: The recitation is every Thursday and is supervised by a Graduate Teaching Assistant (TA) and an Undergraduate Learning Assistant (LA). In recitation you will work on projects in small groups with several of your classmates. Expect to be assigned to groups, which will be changed frequently. The TA and LA will be present during recitations to facilitate your work on the projects, but the goal is for you (and your group-mates) to **work through, and complete these projects on your own** as much as possible.

Your LA and TA will be making sure that you participate in your group's explorations and discoveries. Your grade is partially based on participation, so *participate*.

Missed projects cannot be made up: if you miss a Thursday recitation, you will receive a zero for that project. However your lowest two recitation grades will be dropped.

Written homework: You will be assigned several conceptual problems out of the textbook and from other sources each week. You are expected to write up complete, legible, and logical solutions to these problems, which will be graded by your TA. Each problem should be written using complete

sentences to explain your steps. Expect and plan for some of the homework problems to be more challenging. It is the portion of the course in which we ask you to apply the concepts more deeply and creatively. Homework will be collected at and returned at Thursday recitations. Late homework will not be accepted, but your lowest two homework scores will be dropped. Your homework must be stapled and labeled with your section number to be counted for credit.

Quizzes: There will be a quiz approximately once per week (except in midterm weeks). Your lowest quiz score will be dropped. **Calculators will not be allowed on quizzes.**

Midterms: This course has three midterm exams and a final exam. They have already been scheduled. Calculators and cell phones will not be allowed during any portion of any exam. **Use of any electronic device at any time during the exam will be considered cheating.**

Plan your schedule now. There will be **no makeup exams** given under any circumstances. However, **if you must miss a midterm exam, your Final Exam score will be used as your grade for that midterm**, which will apply in particular if you cannot attend an exam due to emergency, illness, religious observance, or other reason. If you do not miss any midterm exams, we will replace your lowest midterm grade by your final exam grade if it is higher.

- Midterm 1: Monday, September 21, 5:15 pm to 6:45 pm.
- Midterm 2: Monday, October 19, 5:15 pm to 6:45 pm.
- Midterm 3: Monday, November 16, 5:15 pm to 6:45 pm.

Note that midterms **are at night and not in your regular classroom. Exam locations will be announced by each instructor in class, and will be posted on the course website.**

Final exam: The final exam for the course is **cumulative**. It is scheduled for:

Tuesday, December 15, from 7:30 am to 10:00 am.

If you have scheduling conflicts for the final exam due to having three or more final exams on the same day, with two of these falling before the final exam for this course, please inform your instructor within the first two weeks of the semester.

Grades: The grade distribution will be calculated based on the following weighting:

- Midterms (15% each)
- Final Exam (20%)
- WebAssign (10%)
- Written homework (10%)
- Recitation projects (5%)
- Quizzes (10%)

Undergraduate Mathematics Resource Center: You may seek assistance with your math questions in the Undergraduate Mathematics Resource Center in Math 175. You may request help from any lab tutor. Show up prepared, with your textbook and class materials. When you ask a question, begin with a clear statement of the problem, what you have already tried, and why you think it should have worked. The Undergraduate Math Resource Center is open roughly during business hours and also several evenings a week. Check the schedule posted outside the room.

UNIVERSITY POLICIES AND STANDARDS

Classroom behavior and respect for diversity: Students and faculty each have responsibility for maintaining an appropriate learning environment. Those who fail to adhere to such behavioral standards may be subject to discipline. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with differences of race, color, culture, religion, creed, politics, veterans status, sexual orientation, gender, gender identity and gender expression, age, disability, and nationalities. Class rosters are provided to the instructor with the student's legal name. I will gladly honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the semester so that I may make appropriate changes

to my records. For more information, see the policies on classroom behavior and the student code at

www.colorado.edu/policies/student-classroom-and-course-related-behavior

and at

www.colorado.edu/osc/sites/default/files/attached-files/osc_handbook_2015-16.pdf

Accommodation for disabilities: If you qualify for accommodations because of a disability, please submit to your instructor a letter from Disability Services in a timely manner (for exam accommodations provide your letter at least one week prior to the exam) so that your needs can be addressed. Disability Services determines accommodations based on documented disabilities. Contact Disability Services at 303-492-8671 or by e-mail at dsinfo@colorado.edu.

If you have a temporary medical condition or injury, see Temporary Injuries under Quick Links at the Disability Services website (disabilityservices.colorado.edu) and discuss your needs with your instructor.

Religious observances: Campus policy regarding religious observances requires that faculty make every effort to deal reasonably and fairly with all students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance. Please notify us within the first two weeks of the course if you must miss a class, exam, or assignment because of a religious observance. See full details at

www.colorado.edu/policies/observance-religious-holidays-and-absences-classes-andor-exams

Discrimination and harassment: The Office Of Institutional Equity And Compliance (OIEC) Recommends The Following Syllabus Statement:

The University of Colorado Boulder (CU-Boulder) is committed to maintaining a positive learning, working, and living environment. CU-Boulder will not tolerate acts of discrimination or harassment based upon Protected Classes or related retaliation against or by any employee or student. For purposes of this CU-Boulder policy, "Protected Classes" refers to race, color, national origin, sex, pregnancy, age, disability, creed, religion, sexual orientation, gender identity, gender expression, veteran status, political affiliation or political philosophy. Individuals who believe they have been discriminated against should contact the Office of Institutional Equity and Compliance (OIEC) at 303-492-2127 or the Office of Student Conduct and Conflict Resolution (OSC) at 303-492-5550. Information about the OIEC, the above referenced policies, and the campus resources available to assist individuals regarding discrimination or harassment can be found at the OIEC website (www.colorado.edu/institutionalequity). The full policy on discrimination and harassment contains additional information. (www.colorado.edu/policies/discrimination-and-harassment-policy-and-procedures)

Honor code: All students of the University of Colorado at Boulder are responsible for knowing and adhering to the academic integrity policy of this institution (www.colorado.edu/policies/academic-integrity-policy). Violations of this policy may include: cheating, plagiarism, aid of academic dishonesty, fabrication, lying, bribery, and threatening behavior. All incidents of academic misconduct shall be reported to the Honor Code Council (honor@colorado.edu; 303-735-2273). Students who are found to be in violation of the academic integrity policy will be subject to both academic sanctions from the faculty member and non-academic sanctions (including but not limited to university probation, suspension, or expulsion). Additional information regarding the Honor Code policy can be found online (www.colorado.edu/policies/student-honor-code-policy) and at the Honor Code Office (honorcode.colorado.edu)

RECOGNITION of POLICIES AND DATES
Detach, fill out, sign and date and return to your instructor

YOUR NAME: _____

SECTION: _____

I acknowledge that I have been informed that the midterm exams are scheduled for:

Midterm 1: Monday, September 21, 5:15 pm to 6:45 pm.
Midterm 2: Monday, October 19, 5:15 pm to 6:45 pm.
Midterm 3: Monday, November 16, 5:15 pm to 6:45 pm.

and that these exams are at night and not in my regular classroom. I have no schedule conflicts and can attend all of these exams.

Furthermore, I acknowledge that I have been informed that the final exam is scheduled for

Tuesday, December 15, from 7:30 am to 10:00 am.

I have no schedule conflicts and can attend the final exam.

I have read and I understand the syllabus. I understand the system that will be used to evaluate my work in this course. I have checked my enrollment in WebAssign by logging in.

SIGN: _____

DATE: _____