Course Objective: This course extends the ideas of single-variable calculus (e.g., differentiation, integration, optimization) to functions of several variables. Topics include vectors and vector operations, curves in space, multi-variable functions, partial differentiation, multiple integrals, line integrals, Stokes’s Theorem and Gauss’s Theorem. These concepts form the mathematical basis for many areas in the Sciences and Engineering.

Text: Chapters 10–13 of *Essential Calculus*, by James Stewart.

Recitations: Recitations meet for 1 hour on Thursdays. The purpose of the recitation is partly to help you with the homework. More importantly, the recitation is intended to further clarify the Calculus III concepts.

Homework: There are two types of homework problems in this course. On-line problems associated with each lecture will be due prior to the next lecture. Hand written problems will be due, each Friday at 4 PM, under your TA’s office door. Late homework will not be accepted or graded. Graded work will be returned during the next recitation, and the solutions will be posted on the course web page.

Exams: There are three midterm exams and a comprehensive final. The midterms are on Wednesdays (Feb 13, Mar 13, and Apr 18) from 5:00–6:30 PM. The final exam is Tue, May 7, from 10:30 AM–1:00 PM. There will be no make-up exams or early exams. If you are sick during a midterm, please bring a note from your doctor verifying your illness. Your course grade will then be determined by the rest of your course work. Please bring your CU ID to each exam. Electronic devices are not allowed during the exams. If you have questions about exam grading, within one week of the exam submit to your instructor a detailed written explanation addressing the specific grading errors.

Computer projects: To give you experience solving larger, more difficult problems involving multiple concepts, there will be three computer-based projects assigned during the semester. Suggested software is Mathematica, although MatLab and Maple may be used. Further details about the projects will be posted on the course web page. These projects are required of all students registered in APPM 2350.

APPM 2450: This is an optional, 1 credit Pass/Fail lab–based course in which one can learn more about Mathematica. This software is useful for visualizing functions and solving multi-variable problems. Students wanting additional help on their 2350 projects are also encouraged to sign up for this lab.

Grade determination: There is a total of 800 points for the course. The points are distributed over homework (100 points), recitation assignments (50 points), three projects (50 points each), three midterm exams (100 points each), and a cumulative final exam (200 points). You must earn a C- or better on your exams to earn a grade of C- or better in the course. After the final exam, if your exam scores average to something less than a C-, it is not possible to earn a C- or better in the class.

Dropping the course: Advice from the Dean’s office and your department advisor is recommended before dropping any course. After Wed, Feb 27, dropping the course is possible only with a petition approved by the Dean’s office.

Course web page: ([http://amath.colorado.edu/courses/2350](http://amath.colorado.edu/courses/2350)) It is your responsibility to check the web page on a regular basis. Here you will find detailed information such as homework assignments and solutions, past exams, tutoring options, pre-exam review sessions, exam rooms and times, and office hours. In addition, it contains policies on illness, academic honesty, and special accommodations for religious holidays and documented special needs.

Blue books: Each student is required to purchase five 8.5×11 blue books and give them to the TA by the second recitation (Jan 24). These will be used for the exams, so please do not write anything on the front of the books.

Academic Honesty: Students are encouraged to work in groups, however all work turned in must be your own. Violation of the CU Student Honor Code ([http://www.colorado.edu/academics/honorcode](http://www.colorado.edu/academics/honorcode)) or the College of Engineering’s Academic Honesty Advising Guidelines ([http://www.colorado.edu/engineering/ar_ugradadvising.html](http://www.colorado.edu/engineering/ar_ugradadvising.html)) will result in a final grade of F in this course.