COURSE OBJECTIVE: This course extends the ideas of single-variable calculus (e.g. limits, differentiation, integration, optimization, fundamental theorems) to functions of several variables. Topics include vectors and vector operations, vector-valued functions and curves in space, multivariable functions, partial differentiation, multiple integrals, line integrals, and the theorems of Green, Stokes and Gauss. These concepts form the mathematical basis for many areas in science and engineering. The aim is for you to learn these concepts and to critically and creatively solve problems.

TEXTBOOK: Essential Calculus, 2nd Edition by James Stewart. You will also need an access code for WebAssign’s online homework system. The ISBN for the book bundled with the access code is 978-1-133-42582-3. The access code can also be purchased separately. We will cover Chapter 10 through 13.

RECIATIONS: Recitations meet on Thursdays in non-exam weeks. The purpose of the recitation is to help clarify the concepts and techniques covered in lecture, to help you understand the homework, to take quizzes and to turn in written homework.

QUIZZES: Quizzes are given in recitation on most Thursdays throughout the semester (see schedule). There will be 10 quizzes. Your lowest quiz score will be dropped from your final grade calculation. No make-up or late or early quizzes will be given.

WRITTEN HOMEWORK: Written homework is handed in to your TA at the beginning of recitation each non-exam week. Late homework will not be accepted. Hand in organized and neat work. Some suggestions: staple pages together, remove spiral notebook fringes, write in pencil from top to bottom, left to right, box in final answers, and put your name and recitation number on the paper. Grades for written homework will be based on the correct answers to selected problems as well as the proper notation and work shown to arrive at answers, completion of the entire assignment and neatness. In addition, the assignments will include the final answer to some of the problems; to obtain full credit on these, you must demonstrate the logic that leads to that given answer. Some of the written homework problems may require the use of mathematical software such as Mathematica or MATLAB to complete. There will be 12 written homework assignments. Your lowest written homework score will be dropped from your final grade calculation.

ONLINE HOMEWORK: Online homework is completed in WebAssign. When accessing WebAssign, use your IdentiKey credentials and always log in to www.webassign.net/colorado/login.html. Assignments become available at midnight on the day the section is covered in lecture and are due on Tuesdays and Fridays throughout the semester at 11:59 PM (see schedule). Extensions for WebAssign homework will NOT be granted. You should treat the WebAssign homework like the written homework, doing the work on paper, showing the proper steps, notation, justification, etc., prior to submitting your answer into the system (for most problems you have 100 attempts to submit the correct answer). This gives you more practice in writing up solutions, similar to what will be expected on your other work, including exams. Your two lowest WebAssign scores will be dropped from your final grade calculation.

PROJECTS: To give you experience solving larger, more difficult problems involving multiple concepts, there will be two computer-based projects assigned during the semester. These will be group projects with groups consisting of 2 or 3 students. A 10% penalty will be assessed to the project grade for working alone (except under very unusual circumstances). Mathematica is the preferred software and is the Computer Algebra System supported by the TAs. Other software such as MATLAB or Maple may be used but TA and instructor support for these packages may be limited or nonexistent. Students can learn more about Mathematica and get additional help on their 2350 projects by signing up for APPM 2450, an optional, one-credit pass/fail lab-based course.

EXAMS: There will be three midterm exams and a comprehensive final exam. The midterm exams will be given on Wednesdays (February 13, March 13, April 17) from 7:00 PM – 8:30 PM. The final exam is Monday, May 6, 10:30 AM – 1:00 PM. Check the course web page for exam locations. There will be no make-up exams or early exams. If you are unable to take an exam due to illness you must bring a note from your doctor which sufficiently documents your illness and absence; your absence will not be excused if your documentation is deemed unsatisfactory. If excused, your course grade will be determined by the rest of your course work. If unexcused, a zero will be recorded for your exam score. Please bring your CU ID to each exam. Electronic devices of any kind (e.g. calculators, computers, music players, cell phones, head phones, etc.) as well as any notes, cheat sheets, papers, etc. are NOT allowed during the exams.

BLUEBOOKS: Each student is required to purchase four (4) 8.5” × 11” blue books and give them to their TA by the second recitation (January 24). Do not write anywhere anywhere on or in these bluebooks as they will be used for the exams.

CONTINUED
CORRECTIONS POLICY: It is the student’s responsibility to review homework, quizzes, and exams within three days after they have been returned in class and to verify that the grades have been posted correctly in D2L. After one week, your instructor/TA will assume the grades in D2L have been correctly recorded and no further changes will be made. For exam regrade requests, you must submit to your instructor a detailed written explanation addressing the specific grading errors. A penalty may be assessed for any frivolous regrade requests and the instructor may look over other parts of the exam to verify correctness in grading and scoring.

GRADE DETERMINATION: You can earn up to 700 points in the class, distributed as follows:

<table>
<thead>
<tr>
<th>Category</th>
<th>Total Points</th>
<th>Grade Fraction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework</td>
<td>50</td>
<td>$\frac{1}{14}$</td>
</tr>
<tr>
<td>WebAssign</td>
<td>50</td>
<td>$\frac{1}{14}$</td>
</tr>
<tr>
<td>Quizzes</td>
<td>50</td>
<td>$\frac{1}{14}$</td>
</tr>
<tr>
<td>Projects (2)</td>
<td>100 (50 pt each)</td>
<td>$\frac{2}{14}$</td>
</tr>
<tr>
<td>Midterms (3)</td>
<td>300 (100 pt each)</td>
<td>$\frac{6}{14}$</td>
</tr>
<tr>
<td>Final</td>
<td>150</td>
<td>$\frac{1}{14}$</td>
</tr>
</tbody>
</table>

In order to earn a C– or better in this class, you must earn 55% or more of the exam points (midterms plus final) and attain an overall course score of 65% or better. Your overall score will be rounded to the nearest tenth of a percentage point before determining your final grade. The grade cutoffs will be approximately 90% for A–, 80% for B–, 65% for C–, 55% for D–. Note that your exam scores weigh heavily in the final grade computation. It behooves you to perform well on the exams and that is aided by doing well on the homework and quizzes.

IMPORTANT WEB SITES: It is your responsibility to check the following websites on a regular basis. There you will find the course syllabus, information on homework assignments and answers, past exams, office hours, grades, homework schedules, etc. In addition, you will find policies on illness, academic honesty, and special accommodations for religious holidays and documented special needs.

- Course web site
- WebAssign
- Desire to Learn (D2L)

OTHER USEFUL WEBSITES:
- Exam Archive
- Spring Academic Calendar
- Campus Policy on Final Exams

ACADEMIC HONESTY: Students can study with others, however, all work turned in must be your own. Violations of the CU Student Honor Code will result in an automatic final grade of F in this course. Note that copying homework solutions from internet resources (e.g. Wolfram Alpha, Desmos, etc.), another student’s work, a textbook, etc. is plagiarism, a violation of the CU honor code.

DROPPING THE COURSE: Advice from the Dean’s office and your department adviser is recommended before dropping any course. After March 22, dropping the course is only possible with a petition approved by the Dean’s office; click here for further information.

TIPS FOR SUCCESS: For those students have taken AP Calculus in high school, this course may very well be the first one containing material that you have not seen before. Consequently, you will be less able to rely on past experience and knowledge than you may have done in previous calculus classes. With that being said, you will probably need to spend more time outside of class on this course than in previous calculus courses, so plan accordingly. As a minimum, you should consider devoting at least 10–12 hours per week outside of lectures and recitation to studying for this class (going over notes, reading the textbook, completing homework assignments, studying for exams, etc.)
Accommodation for Disabilities: If you qualify for accommodations because of a disability, please submit your accommodation letter from Disability Services to your faculty member in a timely manner so that your needs can be addressed. Disability Services determines accommodations based on documented disabilities in the academic environment. Information on requesting accommodations is located on the Disability Services website. Contact Disability Services at 303-492-8671 or dsinfo@colorado.edu for further assistance. If you have a temporary medical condition or injury, see Temporary Medical Conditions under the Students tab on the Disability Services website.

Classroom Behavior: 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 race, color, national origin, sex, pregnancy, age, disability, creed, religion, sexual orientation, gender identity, gender expression, veteran status, political affiliation or political philosophy. Class rosters are provided to the instructor with the student’s legal name. We will gladly honor your request to address you by an alternate name or gender pronoun. Please advise us of this preference early in the semester so that we may make appropriate changes to our records. For more information, see the policies on classroom behavior and the Student Code of Conduct.

Honor Code: All students enrolled in a University of Colorado Boulder course are responsible for knowing and adhering to the Honor Code. Violations of the policy may include: plagiarism, cheating, fabrication, lying, bribery, threat, unauthorized access to academic materials, clicker fraud, submitting the same or similar work in more than one course without permission from all course instructors involved, and aiding academic dishonesty. All incidents of academic misconduct will be reported to the Honor Code (honor@colorado.edu; 303-492-5550). Students who are found responsible for violating the academic integrity policy will be subject to nonacademic sanctions from the Honor Code as well as academic sanctions from the faculty member. Additional information regarding the Honor Code academic integrity policy can be found at the Honor Code Office website.

Office of Institutional Equity and Compliance (OIEC): The University of Colorado Boulder (CU Boulder) is committed to fostering a positive and welcoming learning, working, and living environment. CU Boulder will not tolerate acts of sexual misconduct (including sexual assault, exploitation, harassment, dating or domestic violence, and stalking), discrimination, and harassment by members of our community. Individuals who believe they have been subject to misconduct or retaliatory actions for reporting a concern should contact the Office of Institutional Equity and Compliance (OIEC) at 303-492-2127 or cureport@colorado.edu. Information about the OIEC, university policies, anonymous reporting, and the campus resources can be found on the OIEC website. Please know that faculty and instructors have a responsibility to inform OIEC when made aware of incidents of sexual misconduct, discrimination, harassment and/or related retaliation, to ensure that individuals impacted receive information about options for reporting and support resources.

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. Contact your instructor if you have any needs in this area. See the campus policy regarding religious observances for full details.