Instructor:  Dr. Karen Braman  
Office:  M 203C  
Phone:  355-3459  
Email:  karen dot braman at sdsmt dot edu  
Math Dept:  M 308 (394-2471 – you can leave me a message here)  
Webpage:  www.mcs.sdsmt.edu/kbraman  

Desire2Learn Portal:  https://d2l.sdbor.edu/index.asp

Lecture Hours:  Section 001:  9:00 – 9:50 am, MTW F, CB 204 E  
Section 003:  2:00 – 2:50 pm, MTW F, CB 309


Office Hours:  1:00-2:00pm, MTW F or by appointment.

Feel free to stop by my office at other times as well. My schedule (http://www.mcs.sdsmt.edu/kbraman/Schedule.pdf) is posted on my office door and available on the class D2L website. If you’re having trouble finding me outside of class, talk to me just before or after class or send me an email. I will find a time that works for both of us!

Course description:  In this course we will take the journey from single variable Calculus (Calc I and II) to multiple variables. Some topics covered will be: vectors, vector valued functions, functions of several variables, polar coordinates, multiple and line integrals. As far as the text is concerned we will cover Chapters 11-15.

Prerequisites:  Math 125 with a grade of ‘C’ or better.

Electronic Devices Policy:  Please turn off your cell phone before class starts. No text messaging in class. No headphones. No other use of any other electronic/computer media is allowed during class time without Dr. Braman’s approval.

Instructional Methods:  This course will be primarily lecture/discussion. Time will be allowed at the beginning of most days to answer a few questions before presenting new
material. You will get the most out of the class time if you **read the assigned section BEFORE class**.

**Homework and Quizzes:** Homework will be assigned for every section we will cover. I recommend that you work AT LEAST all the assigned problems. Mathematics is learned by doing, not watching. If you can, I highly recommend getting together with other members of the class to work on the homework assignments. Some homework will be collected and graded using **WebAssign**. Information regarding access to and use of WebAssign will be provided during the first full week of class, but note that there is an additional fee of $19.95.

Quizzes will be given occasionally. Some will be announced ahead of time and some will not. Most will usually be taken directly from the homework problems. In some cases they may be “open homework” quizzes where you will be allowed to use your completed homework to help you with the quiz.

**Exams:** Three one-hour long exams will be given during the campus common exam times on the following days (rooms TBA):

- Exam 1: Tuesday, Feb 9 → Exam will be at 11am, no regular class that day
- Exam 2: Tuesday, Mar 16 → Exam will be at 11am, no regular class that day
- Exam 3: Tuesday, Apr 13 → Exam will be at 11am, no regular class that day

**Makeups:** If you must miss an exam for a legitimate reason AND notify me before the exam/due date, you may:

1. makeup the exam at 7am on the Thursday of the same week as the missed exam or
2. count the grade for the final exam out of 300 points instead of 200.

If you miss an exam without a legitimate reason or if you do not contact me ahead of time, you will receive a zero. Do not expect to make up for missing assignments by doing extra work at the end of the semester.

**Final Exam:** The final is scheduled for **May 5th, 3:00-4:50 pm**. Please note that the department has a strict **No Early Finals** policy so make any travel plans accordingly.

**Grading:**

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<thead>
<tr>
<th>Component</th>
<th>Points</th>
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<tbody>
<tr>
<td>Homework and quizzes</td>
<td>100 pts</td>
</tr>
<tr>
<td>3 in-class exams @ 100 points each</td>
<td>300 pts</td>
</tr>
<tr>
<td>Comprehensive Final Exam</td>
<td>200 pts</td>
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<tr>
<td>Total</td>
<td>600 pts</td>
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All points carry the same weight. Course grades will be determined according to the following percentage scale:

90-100 A  80-89 B  70-79 C  60-69 D  0-59 F

It is possible that this standard may be lowered, but it will not be raised.

**Attendance and Conduct:** Students are expected to read and follow policies on Attendance, Conduct, and Academic Integrity in the SDSMT Catalog (http://catalog.sdsmt.edu/academic-information/policies-and-procedures/) and the SD Board of Regents policies (http://www.sdbor.edu/policy/3-Student_Affairs/documents/3-4.pdf). Activities that are disruptive and/or obstructive to teaching will include, but are not limited to, the following:

- **Showing up late to class:** While it is understandable that a student might be a few minutes late to class there is a limit to how late one can be. As a general rule, it is acceptable for a person that is less than 10 minutes late to enter class. I would like to ask a student that is more than 10 minutes late to class to refrain from entering class. The student can catch me after class if they need to see me.

- **Eating in class:** While I understand that a student's schedule often has classes that overlap their lunch hour, or doesn't leave time to eat during the day, please refrain from eating during class. Those with medical conditions that require special accommodations are certainly welcome to speak with me.

- **Electronic noisemakers:** Noises from Cell Phones, Pagers, PDAs, computers (including your Tablet PC), or associated electronics will not be tolerated. The best advice is to simply leave your noisemakers at home or in your car. However, if there is some compelling reason why you require such a device then make sure your device is turned off, or is set to vibrate. **If an electronic device disrupts class then the owner will sacrifice their highest homework score for each offense, or pay a fine.** The fine for electronic device disruption is the purchase of cookies for the entire class. (This happens to be similar to a policy used at the state legislature.) Exceptions: if you must remain available for a child or other dependent, please let me know in advance, and set your phone to a silent vibrating call alert.

**Keys to Success:** The keys to success are simple concepts, but are important enough to state.

- Attend and participate in class.
- Keep up with the homework and the lecture.
• Read the text.
• If you don’t understand something then ask questions; go to office hours.
• Set aside plenty of time to study for exams.

What not to do....

• Do not arrive late. It is best to have a seat by 5 minutes prior to the hour. Learn how long you’ll need to find parking and/or walk to class at the start of the semester.
• Do not leave early. Do not start to pack up your notes and books prior to 10 before the hour, unless we’re clearly finished with class early. Exceptions: if you let me know before class that you will need to leave, or you have a genuine emergency.
• Do not talk to other students in class while I’m lecturing. If someone else around you talks too much, please let me know!
• Do not attend to paperwork, homework, or other work that distracts from listening to the lecture.
• Do not read papers, listen to music or surf the web in class.
• Do not come to class if you are too tired, ill, injured, depressed, hung over, etc. to pay attention properly. Get your rest and stay healthy. Come to class well-fed with a decent meal that will not make you suffer a hypoglycemic blood sugar crash half-way through class. Your brain needs a good, steady supply of protein and complex carbohydrates. SDSMT is not free. Why waste the money by not getting much as you can out of lecture?

What to do....

• Be prepared. Read the text before class.
• Stay focused. Don't bring in the other worries and distractions of life. You can't solve them while you are in class, so you might as well focus.
• Be inquiring. Keep "what", "how" and "why" in your head and ask questions. Search for additional sources on the web.
• Follow a schedule. This will keep you consistent and reduce the pretest panic.
• Be proactive. Start on projects right when they are assigned, even if you are very busy. Organize a study group.
• Be alert. If you've read this, good for you! Send me an email with the words "I'm alert" in the subject line no later than Friday, Jan 22nd at midnight to receive 5 points. Be sure to include Math 225, your name and student ID number.
• Take notes. Decide before class start how you plan to do this. Get the supplies prior to class. Notes don't have to be extensive to be useful. They are not a transcription of the lecture, but a short hand to remember the lecture. The text contains the details, so sparse notes allow for thinking during the lecture.
• Take care of yourself. Exercise and real food [not fast or fried food] will make a difference in long term performance.

**Academic Honesty and Integrity:** All students will be held to the institutional standard for academic honesty and integrity. The following are the relevant sections taken from the student handbook (SD Policies and Procedures):

Acts of academic dishonesty will include, but are not limited to, the following:

- **Cheating**, which is defined as, but not limited to, the following:
  - Use or giving of any unauthorized assistance in taking quizzes, tests, or examinations;
  - Use of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or carrying out other assignments;
  - Modifying an assignment or exam and requesting it be re-graded;
  - Acquisition, without permission, of tests or other academic material belonging to a member of the institutional faculty or staff.

- **Plagiarism**, which is defined as, but is not limited to, the following:
  - The use, by paraphrase or direct quotation, of the published or unpublished work of another person without full and clear acknowledgment consistent with accepted practices of the discipline;
  - The unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic materials.
  - Other forms of dishonesty relating to academic achievement, research results or academically related public service;

- **Furnishing information** known or believed to be false to any institutional official, faculty member or office;
- **Forgery**, fabrication, alteration, misrepresentation or misuse of any document, record, or instrument of identification, including misrepresentations of degrees awarded or honors received;

If you cheat on a test or assignment, you may fail the course. At the very least, you will get a negative score on that test or assignment since cheating is worse than doing nothing. Discussing a problem with other students is a valuable learning tool, copying someone else's work is not.
Resources:

- Your instructor (please come see me!)
- Other students in class – try to work on homework problems together. It really helps!
- Tech Learning Center (TLC) in Devereaux Library.

Course Objectives:

- The student will learn the basic tools and methods of multivariate calculus.
- The student will understand applications of multivariate calculus.

Student Outcomes:

A student who successfully completes this should, at a minimum:

- know basic vector operations
- know how to work with lines and planes in space
- understand vector functions and their derivatives
- be able to compute position, velocity and acceleration vectors
- understand functions of several variables
- be able to compute partial derivatives and gradients using multivariate chain rules
- be able to find extremals of constrained and unconstrained functions
- understand iterated integrals
- be able to set up and evaluate double and triple integrals in various coordinate systems
- understand vector fields
- be able to compute line integrals
- understand the basic integral theorems of vector analysis


Continued registration for this course implies acceptance of the preceding policies.

ADA statement: Students with special needs or requiring special accommodations should contact the instructor, (Dr. Braman, at 355-3459) and/or the campus ADA coordinator (Jolie McCoy, at 394-2416) at the earliest opportunity.
Freedom in Learning statement: Under Board of Regents and University policy student academic performance may be evaluated solely on an academic basis, not on opinions or conduct in matters unrelated to academic standards. Students should be free to take reasoned exception to the data or views offered in any course of study and to reserve judgment about matters of opinion, but they are responsible for learning the content of any course of study for which they are enrolled. Students who believe that an academic evaluation reflects prejudiced or capricious consideration of student opinions or conduct unrelated to academic standards should contact the dean of the college which offers the class to initiate a review of the evaluation.