South Dakota School of Mines and Technology
MATH 225 - Calculus III  Spring 2009
Section 1 (SYN 19767) 9:00 am MTWF CB106
Section 3 (SYN 19769) 2:00 pm MTWF CB309

Professor:  Don Teets (donald.teets@sdsmt.edu)
Office:  McLaury 316F (phone 355-3452)
Hours:  MF 3:00-3:50 pm, Tu 1:00-1:50 pm, W 8:00-8:50 am, or by appointment.  Feel free to stop by my office at other times as well.  IF YOU’RE HAVING TROUBLE FINDING ME OUTSIDE OF CLASS, TALK TO ME JUST BEFORE OR AFTER CLASS.  I WILL FIND A TIME THAT WORKS FOR BOTH OF US!

Text:  *Calculus* (Larson, Hostetler, Edwards 8th ed.) We will cover Chapters 11-15 with a few additions and deletions.

Catalog course description
MATH 225 Calculus III (4-0) 4 credits. Prerequisite: MATH 125 completed with a minimum grade of “C.” A continuation of the study of calculus, including an introduction to vectors, vector calculus, partial derivatives, and multiple integrals.

Instructional Methods
This course will be conducted in a lecture / discussion format, with frequent opportunities for students to ask questions.

Computers in Math 225
Applied mathematics in the 21st century is almost certain to involve some use of computers.  In this course, we will use the programs *Maple* and *Excel* to make computationally difficult problems accessible. However, you should not expect to use these tools on a daily basis—they will be used *occasionally* and *only when appropriate*.  Calculus cannot be applied to solve problems unless basic principles are well understood, and computers have little role in building that understanding.

Course goals
Course objectives and student learning outcomes can be found from the School of Mines home page [www.sdsmt.edu](http://www.sdsmt.edu). Under the “Academics” drop down menu, choose “Assessment Office.” Type Math 225 in the Search For box, then follow either of the two Math 225 Calculus III links.

Homework
Homework will be assigned almost every day.  Though I will generally not collect and grade homework, it will be difficult to succeed in this course without doing all or most of the assigned exercises.  For your convenience, day-by-day problem assignments for the entire course are posted on the class web site.  Go to the School of Mines home page, type Math 225 into the search box, and follow the appropriate links.

Quizzes and Hour Exams
We will have occasional quizzes, announced at least one day in advance, particularly near the beginning of the semester. We will also have three 100-point exams during the semester (tentatively scheduled on *Friday 2/13/09, Tuesday 3/24/09, and Friday 4/17/09*). In addition, we may have a computer-based test to demonstrate basic skills using Maple and Excel (details are incomplete as of the beginning of the semester).  Arrangements for taking missed exams will be made on an individual basis, but only if the student provides at the earliest opportunity an adequate reason for missing the exam.

Final Exam
A comprehensive final exam worth 150 points will be given *Wednesday May 6 from 7:00 am to 8:50 am*. (Under no circumstances will it be given early!)

Grading
Points earned on homework, quizzes, hour exams, and the final exam will all carry the same weight. Course grades will be determined according to the following percentage scale:

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<thead>
<tr>
<th>Points</th>
<th>Grade</th>
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<tbody>
<tr>
<td>90-100</td>
<td>A</td>
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<td>80-89</td>
<td>B</td>
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<td>70-79</td>
<td>C</td>
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<tr>
<td>60-69</td>
<td>D</td>
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<tr>
<td>0-59</td>
<td>F</td>
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It is possible that this standard may be lowered, but it will not be raised.  Note that + or - grades are no longer possible.

Attendance and Conduct
Students are expected to read and follow policies on Attendance, Conduct, and Academic Integrity in the SDSM&T Catalog. In particular, you should be aware that the penalty for cheating in any course at SDSMT “shall be at the discretion of the instructor…” and “…may range from requiring the student to repeat the work in question to failure in the course.”
ADA Statement
Students with special needs or requiring special accommodations should contact the instructor and/or the campus ADA coordinator, Dr. Jolie McCoy, at 394-1924 at the earliest opportunity.

Freedom in Learning
Students are responsible for learning the content of any course of study in which they are enrolled. Under Board of Regents and University policy, student academic performance shall be evaluated solely on an academic basis and students should be free to take reasoned exception to the data or views offered in any course of study. Students who believe that an academic evaluation is unrelated to academic standards but is related instead to judgment of their personal opinion or conduct should contact the dean of the college that offers the class to initiate a review of the evaluation.

General Education Goals

This course meets GenEd Goal #5: Students will understand and apply fundamental mathematical processes and reasoning.

Student learning outcomes: As a result of taking a course meeting this goal, students will:

1. Use mathematical symbols and mathematical structure to model and solve real world problems.
   Assessment: Students will
   - Identify, interpret, and correctly apply standard mathematics symbols to solve problems requiring the partial derivative.
   - Identify, interpret, and correctly apply standard mathematics symbols to solve problems requiring multiple integrals.
   - Identify, interpret, and correctly apply standard mathematics symbols to solve problems requiring vectors and vector functions.

2. Demonstrate appropriate communication skills related to mathematical terms
   Assessment: Students will
   - Correctly use functional notation of algebra, trigonometry, and calculus.

3. Demonstrate the correct use of quantifiable measurements of real world situations
   Assessment: Students will
   - Apply their knowledge of the integral in applications such as area, volume, moments, work, arc length, and surface area.
   - Apply their knowledge of the derivative in applications such as rates of change, linear approximations, optimization, velocity, and acceleration.