Math 208H Calculus III (Multivariate)
Section 001

Lecture: MWRF 9:30-10:20 Bancroft (BAN) 307

Instructor: Mark Brittenham
Office: Oldfather Hall (OldH) 819
Telephone: (47)2-7222
E-mail: mbritten@math.unl.edu
WWW: http://www.math.unl.edu/~mbritten/
WWW pages for this class: http://www.math.unl.edu/~mbritten/classwk/208f2k/

(There you will find copies of nearly every handout from class, lists of homework problems assigned, dates for exams, etc.)

Office Hours: (tentatively) Mo 11:00-12:00, Tu 2:00 - 3:00, We 1:00-2:00, and Th 11:00 - 12:00, and whenever you can find me in my office and I'm not horrendously busy. You are also quite welcome to make an appointment for any other time; this is easiest to arrange just before or after class.

Text: *Calculus: Single and Multivariable*, by Hughs-Hallett, Gleason, and McCallum (Wiley, 2nd edition).

This course, as the name is meant to imply, is a continuation of Calculus 1 and 2. Our goal is to redo much of what was covered in the previous courses, for functions having *several* variables (whatever they are). Our basic goal will be to work through the chapters of the book not covered in Calculus 1 and 2:

Ch. 11, Functions of Many Variables
Ch. 12, A Fundamental Tool: Vectors
Ch. 13, Differentiating Functions of Many Variables
Ch. 14, Optimization
Ch, 15, Integrating Functions of Many Variables
Ch, 16, Paramentric Curves
Ch, 17, Vector Fields
Ch, 18, Line Integrals
Ch, 19, Flux Integrals
Ch, 20, Calculus of Vector Fields

This might *sound* like alot of material, and in some sense it is, but you should also note that three of the chapters have only two sections (and for two of those, we are only scheduled to cover one section).

Homework will be assigned from each section, as we finish it. It is an essential ingredient to the course - as with almost all of mathematics, we learn best by doing (again and again and ...). Cooperation with other students on these assignments is acceptable, and even encouraged. However, you should make sure you are understanding the process of finding the solution, on your own - after all, you get to bring only one brain to exams (and it can't be someone else's). For the same reason, I also recommend that you try working each problem on your own, first.

Homework will be collected two class periods after it is assigned (e.g. Monday's assignment is due Thursday, Wednesday's is due Friday, ...), graded, and returned. Homework will be worth 120 points towards your final grade. Late homeworks will be recorded as turned in, but not graded.

In addition, we will have one significantly larger assignment. This **project** will be assigned at the begining of November, and will be collected several weeks later. You may choose to work on the project in groups of up to three, with one write-up turned in for the group, or you may choose to work on it individually. It will count 40 points towards your final grade.

Midterm exams will be given three times during the semester, approximately every four weeks - the specific dates will be announced in class well in advance (likely candidates: late September, end of October, early December). Each exam will count 100 points toward your grade. You can take a make-up exam only if there are compelling reasons (a doctor SAYS you were sick, jury duty, etc.) for you to miss an exam. Make-up exams tend to be harder than the originals (because make-up exams are harder to write!).

Finally, there will be a regularly scheduled **final exam**, on Thursday, December 14, from 6pm to 8pm. Note that this *differs* from the exam time scheduled for the course, based on its meeting time (it is a time common to all Math 208 sections). It will cover the entire course, (probably) with a slight emphasis on material covered after the last midterm exam. It will count 140 points toward your grade.

Your course grade will therefore be calculated based upon a total of $120 + 40 + 3 \times 100 + 140 = 600$ points, and will be converted to a letter grade based partly on the overall average of the class. However, a score of 90% or better will guarantee some kind of **A**, 80% or better at least some sort of **B**, 70% or better at least a flavor of **C**, and 60% or better at least a **D**.

In mathematics, new concepts continually rely upon the mastery of old ones; it is therefore essential that you thoroughly understand each new topic before moving on. (In particular, a proper mastery of the material from Calculus I and II is essential, in order to make your Calculus III experience bearable.) Our classes are an important opportunity for you to ask questions; to make <u>sure</u> that you are understanding concepts correctly. Speak up! It's <u>your</u> education at stake. Make every effort to resist the temptation to put off work, and to fall behind. Every topic has to be gotten through, not around. And it's alot easier to read 50 pages in a week than it is in a day. Try to do some mathematics every single day. (I do.) **Class attendance** is probably your best way to insure that you will keep up with the material, and make sure that you understand all of the concepts. I will not be taking attendance; I expect that you will simply see the wisdom of attending class, for yourselves.

Departmental Grading Appeals Policy: Students who believe their academic evaluation has been prejudiced or capricious have recourse for appeals to (in order) the instructor, the departmental chair, the departmental appeals committee, and the college appeals committee.

Note: If this is your first college mathematics course, then you may be eligible for 10 hours of credit for Math 106 and 107, provided you get a grade of C, P, or better in Math 208 this semester. To be considered for this benefit, you should register with the Department of Mathematics, 810 Oldfather Hall, during the first few weeks of the semester.

Some important academic dates

Aug. 21 First day of classes.
Sept. 1 Last day to withdraw from a course without a **'W'**.
Sept. 4 Labor Day - no classes.
Oct. 13 Last day to change to or from P/NP.
Oct. 16-17 Fall break - no classes.
Nov. 10 Last day to withdraw from a course.
Nov. 22 Student holiday - no classes.
Nov. 23-26 Thanksgiving Vacation - no classes.
Dec. 9 Last day of classes.