MATH 202: Calculus III

MWF Gruening 306 1-2pm
T Gruening 206 2-3pm
http://www.dms.uaf.edu/∼eallman/classes/202-spring-2012/202-2012.html

Instructor: Elizabeth S. Allman

Contact Details: Chapman 308B, e.allman@alaska.edu and 474-2479.

Office Hours: Monday 2-3 pm, Wednesday 12-1 pm, Friday 10-11 am and by appointment.

Prerequisites: Calc II with a grade of C or better. No exceptions will be made.

Textbook: *Calculus, Early Transcendental Functions*, 5th ed., by Larson and Edwards, Cengage Learning

Midterms: (tentative) Friday, February 17; Friday, March 23; late April

Final Exam: Wednesday May 9, 1:00 - 3:00 pm

Course Overview and Goals:

Multivariable calculus is concerned with functions of many variables. Whereas in MATH 200 and MATH 201 you study functions of a single variable (height as a function of age $h(a)$, $f(x)$), in multivariable calculus functions will have more input variables (temperature of a particle in 3-space) or be vector-valued functions (position in 3-space $(x(t), y(t), z(t))$.

Our goal this semester is to extend your knowledge of calculus into the 2-, 3-, and $n-$dimensional realms. All of the techniques you learned from single variable calculus come into play here. Indeed, taking derivatives and computing integrals in the multivariate setting depends intimately on the ability to apply skills from univariate calculus.

Other interesting topics like vector fields and alternative coordinate systems appear. Multivariate calculus is essential for further study in physics, chemistry, engineering, economics, and many other fields, as well as in mathematics. Though visualization in three dimensions can be hard at first, the benefit is well worth the effort.

Course Mechanics:

Class meetings will be run as interactive lectures, to the extent possible given the enrollment. That means that while I will be presenting material at the board, and you will be taking notes, I will also be asking for suggestions, ideas, and questions about the material as we go along. I don't expect 'correct' answers, but I do expect you to be actively following and participating (and taking notes) — that makes the class more interesting for us all.

Class attendance is expected, although I will not formally take roll. If you miss a class, you should get notes from another student. Homework assignments will be posted on the course web page either right before class or soon after class is over. You should bookmark the homework web page, as this is where you will find assignments, due dates, and updates.

Homework will typically be assigned daily, with problems collected each Wednesday. There will be two components to homework assignments – a series of problems consisting of drill work and skills development, and a few longer problems that will be carefully graded. Both assignments will be collected on Wednesday in class.

I will typically begin each class by asking if there are questions about the last lecture and its homework assignment. That means you should review notes and make at least an initial attempt on homework problems before the next class meeting, even though problems

may not be due until several days later. While it never hurts to ask, in general I will defer questions about any earlier assignment to my office hours, in order to keep the course moving along.

I encourage you to work with others on the homework, but you must *write up solutions independently.* You will learn nothing from simply copying someone's solution. The entire written homework assignment will be checked to make sure you have attempted everything, and selected problems will be graded completely by the grader assigned to this course. To be clear, you will be handing in **two** assignments each Wednesday, one consisting of more routine problems that will be checked for completeness and the second assignment consisting of problems that will be graded in their entirety. Please check the webpage for proper formatting of your written assignments.

Homework is due in class on its due date, though you may drop it off in my mailbox in the math department office before the end of class. I will not accept *any* late homework that has not been cleared ahead of time or is not due to a genuine emergency (e.g., a death in the family).

Quizzes will be given randomly throughout the semester, roughly once per week. These will typically take 10-15 minutes and be similar to recent homework. These serve two primary purposes 1) to encourage you to be present in every class and 2) to ensure that you stay current with the homework. If you expect to miss a class, you should talk to me in advance about having any potential quiz waived — you must have a good reason and (except in situations I consider to be emergencies) you cannot get retroactive approval.

Missed examinations that are not approved in advance will result in an 'F' on that exam. No make-up exams will be given except in extreme circumstances (e.g., family death, documented illness, etc.). Notifying me by email or a note that you will miss an exam is not sufficient for advance approval; you must speak with me to be excused.

Tutoring is available at no cost, on a walk-in basis, at the Math Lab in Chapman 305. Hours will be announced, and posted on the door. A good way to use the Math Lab is to simply go there to do your homework, so that if any questions come up you can get immediate help.

Calculators will not be allowed on any examinations or quizzes. This will ensure that testing conditions are equal for everyone. I have no strong feelings on whether you use a calculator when doing homework. As long as you are sure you have the skills to do all calculations by hand, it is fine for you to use technology as a time saver.

Auditing of this course will only be allowed for those who agree to attend regularly, as evidenced by completion of midterm exams and most quizzes.

Grades:

There will be three midterm exams and a cumulative final exam in MATH 202. In addition, there will be weekly homework assignments and regular (announced and unannounced) quizzes. Grades will be assigned using the following weights:

Checked Homework	7 %
Graded Homework	8 %
Quizzes	10 %
Midterm 1	15 %
Midterm 2	15 %
Midterm 3	15 %
Final Exam	30 %

Grade Bands: A, A- (90 - 100%); B+, B, B- (80 - 89%); C+, C, C- (70 - 79%); D+, D, D- (60 - F%); 69 (0 - 59%). On rare occasion, I may lower the thresholds. Also, in an effort to reward the student who makes significant improvement over the course of the term, a stellar grade on the final may overcome a deficiency on the midterm and improve a student's final grade.

University and Department Policies:

Course accommodations: If you need course adaptations or accommodations because of a disability, please inform your instructor during the first week of the semester, after consulting with the Office of Disability Services, 203 Whitaker (474-7403).

Detailed Policies: Your work in this course is governed by the UAF Honor Code. The Department of Mathematics and Statistics has specific policies on incompletes, late withdrawals, and early final exams, some of which are listed below. A complete listing can be found at

`http://www.dms.uaf.edu/dms/Policies.html`.

Prerequisites: The prerequisite for MATH 202 is MATH 201 with a grade of C or better. Students not meeting this prerequisite are not eligible to take this course and will be dropped.

Late Withdrawal: This semester the last day for withdrawing with a 'W' appearing on your transcript is March 23.

Graded Coursework: Please keep all graded work for MATH 202 until final grades have been assigned.

Academic Honesty: Academic dishonesty, including cheating and plagiarism, will not be tolerated. It is a violation of the Student Code of Conduct and will be punished according to UAF procedures.

Courtesies: As a courtesy to your instructor and fellow students, please arrive to class on time and turn your cell phones and iPods off during class.