

INSTRUCTOR: Janice Sklensky

OFFICE: SC 109

OFFICE PHONE: x3973

HOME PHONE: 337-8760 (before 9 p.m.)

E-MAIL: jsklensk@wheatonma.eduCOURSE WEB PAGE: http://acunix.wheatonma.edu/jsklensk/Multi_Spring07/multi.html

OFFICE HOURS: M 3:00-3:50, Tu 12:00-1:20, W 1:30-2:20, Th 10:30-11:50, and F 12:30-1:20.

If you can't make any of my office hours, please feel free to arrange an appointment at a time that works for both of us.

COURSE MATERIALS: *Multivariable Calculus, 3rd edition*, by Smith and Minton. The text should be brought to class every day. There is also an optional student solutions manual.

Also, *Maple* is available for you to use on your own computer if it's connected to the campus network and is running a sufficiently recent operating system. It's also available in the Kollett Academic Computing Center, the CS lab, or the GIS lab.

OVERVIEW:

In Calculus I and II, we focus on single-variable functions. The restriction to a single variable gave us the opportunity to come to grips with the concepts, but limited the applications. In this course, we study the calculus of functions whose outputs are vectors in 2 or 3 dimensions, or whose inputs are points in 2 or 3 (or n) dimensions. This allows us to move beyond curves in 2 dimensions, to curves that lie in 3 dimensions, or even to surfaces, making our models more realistic and, of course, more complicated. For more specifics, please see the syllabus.

COURSE STRUCTURE, GOALS AND EXPECTATIONS:

The main goal for this class is the obvious one – that you master the topics we develop. The others are that you continue to improve at reading technical text and at communicating mathematical material.

Math is a subject you can only learn by doing. I therefore provide you with plenty of opportunities to *do* math: responding to reading, in-class work, and problem sets (not to mention exams!). Working with other students will provide you with opportunities to verbally communicate mathematics while the weekly problem sets will provide practice with communicating mathematics in writing. Reading the text and responding to questions on the reading provide an opportunity to continue to improve at reading mathematics.

The rule of thumb for any college class is to expect to spend 2 to 3 hours working outside of class for every hour in class. No matter what your experience has been in other classes, *plan to spend at least 6-9 hours per week working on this course outside of class!* Of course, some weeks you may spend more than 9 hours on this class, while others you may spend less.

IS THIS THE RIGHT MATH COURSE FOR YOU?

This class is intended for who wants to take it and who has had a solid grounding in both Differential and Integral Calculus. Calculus BC, and sometimes even Calculus AB, can be sufficient preparation.

READING ASSIGNMENTS:

I will put a copy of each reading assignment on the web – follow links from the course website. Each assignment will indicate what you are to be reading that day, and will also have questions that you are to answer by e-mail. The purpose of these assignments is two-fold: to help you continue to develop your mathematical reading skills, and to give you credit for your efforts. You are not

graded on the correctness of your responses, only on whether or not you do the assignment. For more details, see *Guidelines for Submitting Reading Assignments* and *Suggestions for Reading a Math Book* on the course web page.

Reading assignments that are late but received before class will receive half-credit
Reading assignments received after class will receive no credit

PROBLEM SETS:

Mathematics in the real world is usually done as a combination of group and individual efforts. Thus it is important that you are able both to work on your own and to work with others. For that reason, your weekly problem sets will alternate between being done individually and in groups of 2 (or occasionally 3 – never 4).

Problem sets will be due every Friday at the beginning of class. While they are only due once a week, they represent a week's worth of learning, and you should therefore work on them throughout the week.

The assignments will be posted on the web, and can be found through links toward the bottom of the course web page. Consult the **Guidelines for Homework Presentation** on the course web page for information on how your problem sets should look.

Late problem sets will have points deducted!

If turned in on Friday after class but before 2:00, and if everybody involved was in class, then I will deduct 0-25% depending on the situation. I will deduct 50% from problem sets turned in after 2:00 Friday and before 8:45 am Monday. I will not accept any problem sets after 8:45am of the first Monday after the problem set is due, except in the most extreme circumstances. (Whenever you do find yourself in unusual circumstances, please do feel free to tell me – even if I can't see my way to being flexible, at least I can make a note on the grade sheet.)

PROJECT:

One *individual* project will be due this term; you will choose between two options – reading a book on math aimed at a general audience and writing a report on it, or creating a picture using only Maple and equations. This project will be due Friday 4/27/07 at 2pm.

Late projects will be accepted, but significant points will be deducted each day!

EXAMS:

During the semester, I will give two midterm exams to make sure that you are putting together the concepts and skills we have covered. These two midterms will combine an in-class portion with a take-home portion. The reason for breaking the exam up in this way is because I need feedback on whether you've mastered certain skills well enough to do them fairly quickly (hence the in-class portion) but also some problems require a sufficient variety of different concepts, or simply require enough calculation or work on Maple, that it would be unreasonable for me to ask you to get such a problem done as just one part of a 50 minute exam. Please do not think of these two portions as two different exams – I will try to keep the lengths of both portions reasonable!

The final will be cumulative, and will most likely be a take-home exam –I am waiting to decided until I have some sense of which type of test will give me better information on what you’ve learned.

The dates of all of these exams are fairly firmly established, and are listed on the syllabus.

Notify me in advance if you will be missing a midterm exam. If your reason for missing is acceptable, we will arrange that you take the exam **early**. If you miss an exam without notifying me in advance, I reserve the right not to give you a make-up exam. I will not give any student more than one make-up exam during the semester.

ATTENDANCE:

Clearly, missing class is not a wise idea. If you **do** miss class, you are responsible for the material that was covered. *Warning:* – I can only keep one day’s worth of events in my head and may not remember something important, so ask your friends as well as me.

EVALUATION

I expect to use the weights below, although I reserve the right to change my mind if the semester does not go as expected.

Reading Assignments	5%	Two Midterm Exams	40%
Individual Project	10%	Comprehensive Final Exam	20%
Problem Sets	25%		

If you question the fairness of any grade, please feel free to bring it to me, but please do so **within a week** of receiving it.

HONOR CODE

I expect you to abide by the Honor Code. *Remember: If you see a violation of the Honor Code occurring, you are bound by the Honor Code to report it.*

As part of the honor code, you are required to write

I have abided by the Wheaton College Honor Code in this work

followed by your signature, on all written assignments. Every time you do, you should be pondering the question “how exactly does the honor code apply to *this* assignment, and did I *really* abide by it?” If, upon consideration, you do not feel you can truthfully write and sign the pledge, please come speak to me immediately!

So, specifically, how does the Honor Code apply in this class?

For all assignments: You may discuss the work with classmates, and you may use references that help you figure out how to do a problem on your own, but you may not use any references (people, other people’s projects or assignments, books, the web) which either give you the answer or lead you directly to the solution. When you do use references (whether people or other sources, as described above), you *must* cite them.

Reading assignments: You may discuss the questions with your classmates, but you must enter the responses yourself, in your own words.

Homework:

- For the individual problem sets, you must write the results on your own, in your own words.
- For the group problem sets,
 - You may not divide the work!
 - you must make every effort to meet with your group at all meetings. You may not purposely exclude any member from a meeting.
 - you must make every effort to participate and aid in finding the solutions. If you don't understand what someone else is saying, you must ask them to explain it. If someone asks you to explain your ideas, you must take the time to explain it. In the end, you must understand all the work that is being submitted under your name.
 - after your group has jointly figured out every problem, one person will be responsible for recopying your work. This primary author must change from week to week.
 - when it comes time to divide up the group's points, do not give, or take, credit that is not due.

Projects: The work you do, and the work you turn in to me, must all be your own work. If you are reading a book, it must be a book you have *not* read before.

In-Class Exams: You may not use any notes, books, or colleagues as reference during the exams, except for a "cheat sheet" if I decide to allow one. Of course, if I do allow one, you must conform to my stated rules. You may not look at anybody's exam or "cheat sheet" until after all exams have been returned. You may not use a calculator unless I specify that you may, and you may not use the graphing aspect of a calculator.

Take-Home Exams: You must follow whatever rules I state on the exam – if it is a closed-book exam, then of course you may not look at the textbook, your notes (or anybody else's), and you may not discuss the exam in any way with anybody other than me. This not only includes specifically discussing problems, which is obviously taboo, but also simply commenting on whether a problem is hard (you can really affect somebody else's exam just by saying a problem is hard or easy). Also avoid discussing take-home exams with other faculty members!