INSTRUCTOR: Janice Sklensky OFFICE: SC 109
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OFFICE HOURS: M 12:30-1:20, T 11:00-11:50, W 3:30-4:20, Th 9:30-10:20.
If you can't make any of my office hours, we can arrange an appointment.

COURSE MATERIALS: *Calculus, from Graphical, Numerical, and Symbolic Points of View, Volume 1, 2nd edition*, by Ostebee and Zorn.

Maple is available for you to use either in the Academic Computing Center or on your own computer (only for the duration of the semester).

The text if you have one, should be brought to class every day.

OVERVIEW:
Most everything in the world changes: DNA, the orbits of the planets, weather, shopping patterns, and your annual income, to name a few. Understanding, predicting, and being able to affect how these quantities change is critical – and for that, we need Calculus! Calculus, widely recognized as one of humanity's outstanding accomplishments, allows us to describe and predict the behavior of changing quantities. Of course, we usually can not predict the behavior exactly, but even a good approximation is helpful. Calculus is all about using approximations. Often we can use better and better approximations until, by deducing what would happen if we continued this process ad infinitum, we find a precise solution!

This semester, you will begin to study this language of change. By the end of the course, you'll have the tools necessary to solve many fascinating problems. Many of the topics we will cover this semester allow us to solve problems that do not seem, at first glance, to be mathematical at all.

GOALS AND EXPECTATIONS:
Of course, one primary goal for this class is that you master the topics developed in this course. The others are that you improve at reading technical text and at clearly communicating complicated material. These are lifetime skills that are necessary in nearly every career.

In this class, as with all others, how much you actually learn is entirely up to you. Math is a subject you can only learn by doing–observing me (and others) may give you a start, but it is certainly not enough. Class will combine lecture with time for in-class work so that you may *do* what you've just observed. This class work will naturally involve communicating mathematics verbally. As for written communication, between the problem sets and the two group projects, you will get practice with both technical explanations and explanations to a general audience. In class, I will be focusing on selected topics and may give a fairly brief introduction. You are thus required to read the material we'll be covering each day **before** coming to class, and to send me the answers to some questions on the reading.

The rule of thumb for how much work you should expect to spend on any college class is 2 to 3 hours of work outside of class for every hour in class. No matter what your experience has been in other classes,

Plan to spend at least 8 hours a week on Calculus outside of class!

Of course, some weeks you may spend more than 8 hours on this class, especially when studying for exams or finishing up projects, while others you may spend less.

IS THIS THE RIGHT MATH COURSE FOR YOU?
This course is of course intended for students who want to take it, or whose majors (or emphases) require them to take it: Calculus is not required for graduation. Those majors which require Calculus are: Math (of course), Physics, Chemistry, Economics, and Environmental Science. Calculus is also recommended for students who are Premed.

Students interested in other disciplines are of course welcome and encouraged to take Calculus, just be aware: if you are considering majoring in Psychology, you will be required to take Statistics. Statistics is also recommended for Sociology and Political Science majors. Early Childhood and Elementary Education minors are required to take Concepts of Mathematics.

Calculus I is intended to be your first exposure to Calculus. If you've had Calculus before, we encourage you to try Calculus II, whether you received credit for Calc I here or not!

READING ASSIGNMENTS:
I will put a copy of each reading assignment on the web (you can follow links from my homepage). Each assignment will indicate what you are to be reading that day, which parts are especially important and whether any can be skipped. Each assignment 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. These responses are required.

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

For more details, see *Guidelines for Submitting Reading Assignments* and *Suggestions for Reading a Math Book* on the course web page:

http://acunix.wheatonma.edu/jsklensk/Calc1_Fall04/calc1.html

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 communicate complicated ideas to others. For that reason, your weekly problem sets will alternate between being done individually and in groups. Problem sets will be due every Thursday at 1:00pm (the beginning of lab). **Begin the week's problems on Friday** – they represent a week's worth of learning. The assignments will be posted on the web. The assignments 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 Thursday after lab but before 3:00 (and if everybody involved was working appropriately in lab), I will deduct 0-20 points depending on the situation. Problem sets turned in after

3:00pm Thursday and before 2:00pm Friday will receive half credit. I can not accept any problem sets after 2:00pm Friday of the week the problem set is due.

PROJECTS:
You will work on 2 group projects this term. These will consist of questions which are more open-ended than homework problems tend to be. You will have one or two days of class time to work on these projects; the rest of the work you will do outside of class. The project consists not only of the mathematical solution to the situation, but (equally importantly) your description of the solution and why it is true – in the form of a letter.

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

DIFFERENTIATION EXAM:
Differentiation is a fundamental tool for understanding the deeper concepts of the semester. The Differentiation Exam will consist of four problems, and is graded with no partial credit. You must get every problem completely correct to get credit on the exam, but you may retake (different versions of) this exam as many times as necessary until you pass. If you pass it before the first deadline, you get 100% on the exam. (There are two later deadlines, for 75% and for 50%. All of the important dates are on the syllabus.)

EXAMS:
During the semester, I will give three exams to make sure that you are putting together the concepts and skills we have covered. The primary emphasis of the exams will be for you to show me how well you've mastered the underlying mathematical ideas. The final will be cumulative. The dates of all exams are fairly firmly scheduled, and are listed on the course syllabus.

For each of these exams, you may bring one 8.5 x 11 page of notes, **handwritten (by you) on one side**, which you will turn in with the exam.

Notify me in advance if you will be missing an 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, your 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.

Reading Assignments	4%
Problem Sets	9%
Two Group Projects	14%
Differentiation Exam	4%
Three In-Class Exams	48%
Final Exam	21%

If you question the fairness of any grade, bring it to me **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 (as described above), you *must* cite them.

For all group 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 may not divide the work!

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.

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, 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.

Projects: While you may not break the project up into different tasks that you divide up among you, if a repetitive process is called for, you may spread the task among you.

You *may* divide the writing of the paper in whatever way is agreeable to the group. You must proofread the entire paper for consistency and typos.

Dividing Up Group Points: Do not give, or take, credit that is not due.

Differentiation Exam: The different versions of the Differentiation Exam are numbered. If you and a classmate have both finished a certain version of the exam, you may look at it together and discuss it, but otherwise no sharing of the exams is to take place, either while taking it or after the fact.

Midterm and Final Exams: You may not use any notes, books, or colleagues as reference during the exams, except for your "cheat sheet", which 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.