

INSTRUCTOR: Janice Sklensky

OFFICE: SC 327

OFFICE PHONE: x3973

E-MAIL: jsklensk@wheatonma.edu

OFFICE HOURS: Posted on my webpage.

HOME PAGE: <http://acunix.wheatonma.edu/jsklensk/home.html>

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

Note: The textbook is available for rental for a reduced price, but if there's any chance that you will take Calculus 2, it will be more expensive to rent the text twice than it would be to buy a used version (or possibly even a new version, depending on where you find it) – and if you rent it, you neither have the textbook to keep nor have the opportunity to sell it back.

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 can be extremely 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 will have the tools necessary to solve many fascinating problems. Several 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, the 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. The course is structured to give you repeated opportunities to work with the material, at increasing levels of depth and complexity.

Your initial exposure to the material will come through your reading of the text before each class, so that your attention in class may be more focused. Class itself will often combine lecture with opportunities for in-class work with fellow students on introductory problem, so that you *do* what you've just observed in order to help crystallise your understanding of the material, *or* to help you identify where some confusion is arising. This initial exposure is followed by more drill problems for each section to be completed daily on-line; you will get immediate feedback on these, so you will know right away whether you are understanding the basics. To deepen your grasp of the material, you will also have weekly problem sets consisting of more conceptual questions. For a greater variety of opportunities to deepen your mastery of the material, there will be two projects which present questions in a more realistic manner, and of course exams, which encourage you to look at the big picture and fit the material into its place within the course.

Notice that this structure not only aims to maximize your mastery of Calculus, but also to help accomplish the secondary goals as well – improving reading of technical material through guided reading, learning to more clearly communicate complicated ideas—verbally, through working with partners on in-class work, some problem sets, and projects, and in writing, through weekly problem sets and projects.

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?

Wheaton’s Calculus I course is designed to be a first exposure to Calculus. If you’ve had Calculus before, we encourage you to try Calculus II – you don’t need to have received credit for Calculus 1 to do so. If you decide to stay in this course despite having had some Calculus before, please be considerate of those who have *not*, by saving comments or questions on material we haven’t yet gotten to for after class or during my office hours – it makes people nervous!

While Calculus 1 is a first exposure to Calculus, it of course does assume a fair amount of previous mathematical experience, including trigonometry and exponential functions. Anybody who has passed a Precalculus course has probably seen all required material; if you have not had Precalculus, please come to my office so we can discuss which topics you have seen and which you have not. To help identify potential trouble spots for each student as early as possible, we have prepared on-line preliminary assessments of various skills that this course builds heavily upon.

This course is intended for people who either are interested in math or whose major requires it. Calculus is *not* required for graduation; if you’re not particularly interested in math or in a major which recommends it, there may be a course that better fits your interests.

HONOR CODE

As you know, Wheaton has an Honor Code, and you have bound yourself to abide by it in all your work. As a reminder of your commitment:

As members of the Wheaton community, we commit ourselves to act honestly, responsibly, and above all, with honor and integrity in all areas of campus life. We are accountable for all that we say and write. We are responsible for the academic integrity of our work. We pledge that we will not misrepresent our work nor give or receive unauthorized aid. We commit ourselves to behave in a manner which demonstrates concern for the personal dignity, rights and freedoms of all members of the community. We are respectful of college property and the property of others. We will not tolerate a lack of respect for these values.

I accept responsibility to maintain the Honor Code at all times.

As part of the Honor Code, if you see a violation occurring, you are bound to report it. Also, 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!

For a discussion of how the Honor Code specifically applies to the various assignments and exams in this class, please see the last several pages of these policies.

PRELIMINARY ASSESSMENTS:

I will put several "preliminary assessments" online. Each consists of several problems covering some basics from arithmetic, algebra, functions or trigonometry that I feel you should be comfortable with in order to focus on learning Calculus. If the results of the assessment point out some gaps in your background, we will know early enough so that you can begin getting help from me and from the Kollett Center before they become a critical part of the class.

How you initially do on these preliminary assessments will not affect your final grade in any way – the only requirement is that you do, in fact, take them, and if necessary take action to fill those gaps in your background that are indicated by it, eventually passing each one. Each preliminary assessment focuses on a single area, such as algebra, so that each student only needs to practice the specific areas they have difficulty with (if any). These assessments are done online, and are available through OnCourse. (I will introduce you to the website we're using in lab the first week). Each one can be taken repeatedly, with slightly different problems appearing each time you take it. Once you have successfully passed all of them, I will give you credit equivalent to 2 problem sets – what "successfully passed" means varies according to assessment, as they are different lengths.

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, which parts are especially important and whether any can be skipped. Each assignment will also have questions that you are to answer through OnCourse. 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.

OnCourse does not accept late assignments

For more details, see the course webpage itself and the link *Suggestions for Reading a Math Book* from the course web page.

HOMEWORK:

Your weekly homework assignments are divided into two portions: online problems, which I will refer to by the system we use, *WeBWork*; and (usually) more conceptual problems, which will be handwritten which I will refer to as *Problem Sets*.

This is not twice as much homework as I would assign without WebWork; it is the same amount. WebWork is helpful for giving you instant feedback; the Problem Sets are helpful both for giving you partial credit but more importantly for giving you weekly practice at organizing your thoughts in a forum where the presentation of your work counts as much as the final result does.

For more details on the homework assignments, see the links *A Description of Calculus 1 Homework Assignments* and *General Guidelines for Problem Set Presentation*.

The assignments will be posted on the web, and can be found through links toward the bottom of the course web page.

Late WeBWorK will not be accepted!
Late handwritten problem sets will have points deducted!

I will drop your lowest WeBWorK score at the end of the term.

If a problem set is turned in on Thursday after lab but before 2:45 (and if everybody involved was working appropriately in lab), I will deduct 0-20 points depending on the situation. Problem sets turned in after 2:45 pm 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 with your group outside of class. The project consists not only of the mathematical solution to the situation, but (equally important) your description of the solution and why it is true – in the form of a letter.

Late projects will have points deducted each day!

Projects turned in within 24 hours of the time they are due will be graded out of 85 points rather than 100; projects turned in between 24 and 48 hours late will be graded out of 70 points; projects turned in between 48 and 72 hours late will be graded out of 50 points. I will not accept projects more than 72 hours late.

DIFFERENTIATION EXAM:

Differentiation is a fundamental tool for understanding the later 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.

(Because the differentiation exam deals with skills learned in this class, unlike the preliminary assessment, it will not be online, as students often learn by discussing each exam with me as they finish it.)

If you pass it before the first deadline, you get 100% on the exam. (There are three later deadlines, for 90%, 75% and for 50%. All of the important dates are on the syllabus.)

EXAMS:

During the semester, I will give three midterm 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. At the end of the semester, there will be a cumulative final. 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. The midterm exams will be given during the lab period, and may be begun at 12:30.

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, 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.

Although attendance is not a formal part of your evaluation, I will be keeping track and may use it to determine borderline cases.

ACCOMODATIONS:

In compliance with the Wheaton College policy and equal access laws, Dean Wilhelm is available to discuss appropriate accommodations that may be recommended for students with disabilities. Requests for accommodations are to be made during the first two weeks of the semester so that timely and appropriate arrangements can be made. Students are required to register with Denyse Wilhelm, Assistant Dean of Academic Resources and Disability Services, ADA/504 Coordinator, whose office is located in Kollett Hall, first floor at the Filene Center for Academic Advising and Career Services. Contact ext. 8215 to schedule an appointment, or email Dean Wilhelm at wilhelm_denyse@wheatoncollege.edu.

EVALUATION

I expect to use the weights below, although I reserve the right to change my mind.

Reading Assignments	4%	Differentiation Exam	4%
WeBWorK	6%	Three In-Class Exams	48%
Problem Sets	6%	Final Exam	21%
Two Group Projects	11%		

If you question the fairness of any grade, bring it to me **within a week** of receiving it.

HONOR CODE

You are expected to abide by the Honor Code in all your work at Wheaton. Below, I detail how the Honor Code relates to the various assignments and exams in this course.

- **If you see a violation of the Honor Code occurring that relates to this course, you are bound by the Honor Code to report it to me.** If you do not feel comfortable reporting it to me, the chair of the department or Dean Kuszaj are other resources.
- **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 use references** (as described above), you *must* cite them. For instance, if you work with friends on an individual problem set, or if you get help from a tutor, write

something like *I worked with Jane Friend on this assignment*, or *I received help from Joe Tutor on Problems 3, 4 and 7*.

- **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.

Do not put your name, or allow your name to be put, on any assignment to which you did not substantially contribute mathematically. (If you felt lost at the beginning of the assignment, you should have made every effort to learn the material, and should understand it by the time the assignment is turned in.)

Similarly, do not allow anyone else's name to be put on an assignment unless they worked hard to understand the material involved. Do not allow an understanding of how difficult that person's week was to overcome this rule – a student who has had a difficult week should come speak to me and I will make a note of it in my gradesheet.

- **Preliminary assessments:** You must try every question on any assesment yourself, each time you take an assessment. If you miss any, I urge you to get assistance from either me or a tutor, but only on questions you have already missed. You may not have any help *while* you are working through an assessment – the entire point is to try to identify issues early in the course in order to address them; if you get help, we've missed an opportunity and you may end up having considerably more difficulty in the course than is necessary.
- **Reading assignments:** You may discuss the questions with your classmates, but you must enter the responses yourself, in your own words.
- **Homework:** For WeBWork and for individual problem sets, you may discuss the underlying ideas, but you must do the problems on your own.

For the group problem sets, **you may not divide the work!** You must make every effort to find a time when every member of the group can make it to your meetings (groups should consist of two or three people). 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 them. In the end, you must understand every problem that is 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.

- **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. Each person should understand all of the work that is done.

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

You absolutely positively may not divide the project work by saying one person will figure out the math and another will write it up!

- **Dividing Up Group Points:** Do not give, or take, credit that is not due. If you did not work on a problem set or project at all, you should not receive any points for that problem set. If your contribution was minimal, you should receive minimal credit.
- **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. You may not text anybody during the exam, or receive a text message from anybody during an exam.