

COURSE POLICIES – MATH 104: CALCULUS 2

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COURSE WEBSITE - PUBLIC: <http://acunix.wheatonma.edu/jsklensk/home.html> - Math 104

Links to course policies, syllabus, problem sets, in-class problems, WeBWorK, OnCourse, Maple Guides, etc

COURSE WEBSITE - PRIVATE: the OnCourse page for this course

Consists of links to questionnaire, supplemental material, study guides

MEETING TIMES: MWF 10:30-11:20 in SC 1349; Th 1:00-1:50 in Mars SC 1141

OFFICE HOURS: Tentatively M 1:30-2:20 , W 2:00-3:20 , Th 10:00-11:20 , F 11:30-12:20
and by appointment, when necessary.

COURSE MATERIALS: *Calculus*, by Taalman and Kohn. There is also an optional student solutions manual (unfortunately, one for single variable Calculus and one for multivariable; we're covering both.)

Also, *Maple* is available for you to use on your own computer when it's connected to the campus network and is running a sufficiently recent operating system. See my public web page for the course for a link to instructions on how to upload this. It's also available in SC 1314, SC 1349, the CS lab, and (I believe) the computers in the library, the Kollett Center, or the GIS lab.

OVERVIEW:

This course is mainly a continuation and expansion of the topics covered in Calculus 1. We begin the course by expanding the exploration of the integral begun in Calculus 1. We later expand beyond the restriction to a single variable, studying the Calculus of functions whose inputs are points in 2 or 3 (or n) dimensions. This allows us to move beyond curves in 2 dimensions to surfaces in 3 dimensions, making our models more realistic and (of course) more complicated. Two intertwined and recurring themes of Calculus 2 are the connections between the approximate and the exact, and the finite and the infinite. We will repeatedly see that if we are willing to explore infinity, we can often find exact solutions where approximations at first seem to be our only option. Because finding exact solutions is still not always possible, we will also spend some time developing various methods both to find approximate solutions to these same problems, and to find how good those approximations are.

COURSE STRUCTURE, GOALS AND EXPECTATIONS:

Calculus is recognized as being one of humanity's outstanding accomplishments. Furthermore, the more math you learn, the more you hone your logical abilities. For both these reasons, the main goal for this class is the obvious one—that you master the topics we develop. Secondary goals are that you continue to improve at communicating complex material and at reading technical text.

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 therefore structured to give you repeated opportunities to work with the material, at increasing levels of depth and complexity.

The lecture format for classes was developed at a time when books were scarce – class consisted of the teacher dictating from the textbook and students copying it down. They then absorbed and mastered the material on their own. There is no longer any shortage of information – you can easily

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have your first exposure to the material occur outside of the classroom, and we can use class time to begin the absorption of the ideas. Of course, mastery will occur through your continued efforts outside the classroom.

Your initial exposure to the material should come through your reading of the text before each class. Class time will be devoted not to my presenting the information to you for the first time, but to me helping you to work your way to a deeper understanding of the material. Because more and more studies indicate that students benefit immensely from an opportunity to both practice what they've learned and to discuss the concepts with fellow students, class itself will therefore often combine lecture with opportunities for in-class work in small groups on introductory problems so that you may *do and discuss* what I've just shared. These efforts should help crystallize 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 a combination of more drill problems and conceptual questions. To enhance your understanding still more, there will also be occasional group problem sets consisting of a few more involved problems. And to encourage mastery of the material, there will be three midterm exams and a final exam, each of which encourages you to look at the big picture and fit the material into its place within the course.

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 requiring you to have read the text each day and learning to more clearly communicate complicated ideas—verbally, through working with partners on in-class work and some problem sets, and in writing, through both types of problem sets.

The expectation for all classes taught at Wheaton is that you spend 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 - 12 hours per week working on Calculus outside of class!** Of course, some weeks you may spend more than 12 hours on this class, while others you may spend fewer than 8 hours.

IS THIS THE RIGHT MATH COURSE FOR YOU?

Calculus II is aimed at students who have had a solid grounding in Differential Calculus, with an introduction to Integral Calculus. For instance, if you've taken Calculus AB in high school, then Calc II is probably a good choice for you – whether or not you passed the AP test. The first third of the course may be review, but the rest will be new. Even if you've taken Calculus BC in high school, you should take Calc II – the first half of the course will be review, but the second half will be new.

Calculus II is intended for students who want to take it, or whose majors require them to take it. Calculus is not required for graduation, and may not be the best way to fulfill your math requirement if you have no especial interest in math.

CLASSROOM ETIQUETTE:

I would like to provide a classroom atmosphere with minimal distractions for both you and me, in which all students feel comfortable asking a question or contributing to a discussion. I therefore

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ask that you show both me and fellow classmates respect when it is their turn to speak.

This not only means that I ask that you not talk or whisper while someone else is speaking, but that you refrain from:

- texting
- using a computer except during designated times. If you have accommodations that encourage taking notes using a computer please do let me know, and get the accommodations letter to me as quickly as possible.

Please ask me questions when you do not understand something. I know it can be uncomfortable, but I can guarantee you that 95% of the time, if you have a question, so does at least one other person in the class!

When we are reviewing material you've seen before, please be considerate of those who have *not* previously seen it, by saving comments or questions on material we haven't yet gotten to for after class or during my office hours – doing otherwise makes other students nervous!

Unfortunately, there is no eating or drinking in the main classroom (SC 1349) because of the presence of the computers.

DAILY ASSIGNMENTS:

This class moves quickly, and in order to stay caught up, you will need to have practiced the material from one day's class at least a bit before we move on to the next day's material. To this end, you will have daily on-line assignments consisting of small number of problems, due at 8am every Monday, Wednesday, and Friday. These assignments will remind you of recent vocabulary and basic ideas; doing them online allows you to receive instant feedback.

These assignments are done through a system called *WeBWorK*. You will find links to WeBWorK on my public webpage, OnCourse, and the syllabus.

Late daily assignments will not be accepted
(except in extreme circumstances).
I will drop the lowest two daily scores at the end of the term.

WEEKLY PROBLEM SETS:

In addition to the short daily assignments, you will have more extensive and more conceptual weekly homework assignments. Some of the problems will be submitted through WeBWorK, others will be handwritten.

Problem sets will generally be due every Thursday 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. Because the weekly problem sets will only cover through Monday's material, and the purpose of the daily assignments is to ensure familiarity with the material for the most recent class, on most Wednesdays you will have both a daily assignment due and a weekly problem set due, so please plan your time accordingly.

Be aware: the combination of daily WeBWorK assignments and weekly problem sets done both through WeBWorK and in the traditional handwritten way do **not** combine to be more homework

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than I have assigned in the past, before WeBWorK. I have split my usual homework assignments between them. WebWork is helpful for giving you instant feedback; written problems are helpful both for giving you partial credit and also 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 (which is more reflective of the real world). Dividing the weekly homework between WeBWorK and Problem Sets should have the additional benefit of allowing the grader to grade a larger number of your handwritten problems than has been possible in the past.

For more details on the homework assignments, see the links *A Description of Calculus 2 Homework Assignments* and *General Guidelines for Problem Set Presentation* on the public course web page.

The assignments will be posted online; you will find them through links toward the bottom of the public course web page.

Late weekly problem sets will have points deducted!

If turned in on Thursday after class but before 4:00pm, then I will deduct 0-10% depending on the situation. I will deduct 10%-20% for problem sets turned in after 4:00 pm Thursday and before 10:00am Friday. Problem sets turned in between 10:00am and 2:00pm Friday will lose between 15% and 30%. I will not accept any problem sets after 2:00pm of the Friday immediately following the original due date, except in extreme circumstances.

(If you *do* find yourself in unusual circumstances, please do let me know. I can often be flexible, particularly if I have advance warning, but in those situations where I can not, I can make a note of your situation on my grade sheet, to remind me at the end of the semester.)

OCCASIONAL GROUP PROBLEM SETS:

In order to give you the experience of working with more complex questions and composing longer solutions, as well as working in groups (which is an important part of most scientific or mathematical careers), I will assign additional Group Problem Sets – about one every three to four weeks. These are to be worked on in groups of 2 or 3 people (never 1, never 4 or more), outside of class. The problems are **never** to be split amongst the group.

(Please note that this does not add extra work to the class – in the past, I have assigned two extensive projects. While that format doesn't seem to fit with the new syllabus, this should give some of the same experiences, while being a bit more spread out.)

Group problems sets will be due on Mondays at the beginning of class.

Late group problem sets will have points deducted.

If turned in on Monday after class but before 3:00pm, then I will deduct 0-10%, depending on the situation. I will deduct 10%-20% if turned in before 10:00am Tuesday, 20%-30% if turned in before 10:00am Wednesday, 30%-40% if turned in before 10:00am Thursday and 40%-50% if turned in before 10:00am Friday. I will not accept group problem sets after 10:00am of the Friday immediately following the original due date, except in extreme circumstances. (See above note about unusual circumstances.)

ANTIDIFFERENTIATION EXAM:

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Antidifferentiation is a fundamental tool for understanding the deeper concepts of the semester. The Antidifferentiation 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 several later deadlines, for 90%, 75%, 50% and 40%. 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. The dates of these exams are fairly firmly scheduled, and are listed on the course syllabus. The final will be cumulative, will continue to emphasize concepts, and will be 3 hours long. Remember that finals can not be rescheduled, and make your travel plans accordingly.

For each exam (other than the antidifferentiation exam), 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. These midterm exams will be given during the Thursday period; while they will end no later than 1:55, you may begin them as early as 12:30.

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, without extensive documentation of a significant reason backed up by the advising office.

ATTENDANCE:

Clearly, missing class is not a wise idea, particularly in a subject like Calculus. I therefore don't make attendance explicitly part of your grade. However, I do keep track of attendance to some extent, and may use it when assigning final grades at the end of the term, for students who are at the borderline between two grades.

As soon as you know that you will be missing class, please let me know (e-mail is best)– if you will be missing class for a mandatory field trip or similar activity, I can make a note of it in my file.

Illness aside, I view your attendance or lack thereof as your choice and your responsibility. If you **do** miss class, you are responsible for the material that was covered.

I should probably warn you: – 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 when checking what you missed.

ACCOMMODATIONS:

In compliance with the Wheaton College policy and equal access laws, the Coordinator for Academic Support and Disability Services 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 this coordinator, whose office is located in Kollett Hall, (*fill in missing details*). *Contact extension ??? to schedule an appointment, or email ??? at ???@wheatoncollege.edu.*

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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.

Daily Assignments	14%	Antidifferentiation Exam	5%
Weekly Assignments	14 %	Three In-Class Exams	40%
Occasional Group Assignments	7%	Final Exam	20%

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

HONOR CODE

As you know, 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.

- 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. If, upon consideration, you do not feel you can truthfully write and sign the pledge, please come speak to me immediately.

- **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.** 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 weekly 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*.
- **Daily WeBWork:** You may discuss the underlying ideas with your classmates, but you must not only enter the responses yourself but understand the results. Do not simply try every possibility until you reach the correct one.
- **Weekly Problem Sets:** You may discuss the underlying ideas, but you must do the problems on your own. You must understand every problem that is submitted under your name.
- **Occasional Group Problem Sets:** 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! ||

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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.

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 them. 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.

- **Dividing Up Group Points:** Do not give, or take, credit that is not due. If you did not work on a group problem set at all, you should not receive any points for that problem set. If your contribution was minimal, you should receive minimal credit.

Antidifferentiation Exam: The different versions of the Antidifferentiation 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 or any device with access to the internet or phone lines. You may not text anybody during the exam, or receive a text message from anybody during an exam.