Instructor: Greg Knapp
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Office Hours:
Mon: 3:00–4:00 pm
Wed: 4:00–5:00 pm
Thu: 3:30–4:30 pm

1 Classroom Environment

1.1 Inclusivity

Historically, mathematics has been an exclusive discipline and has shut out people for their race, gender, sexual orientation, political views, etc. This is terrible, but cannot be undone. We can work to create a more inclusive environment for current mathematics students, however. Racism, sexism, ableism, other discrimination or harrassment, or general behavior that creates an unwelcoming environment will not be tolerated in this classroom. Furthermore, even if you do not see people like you represented in the mathematical community, you still belong here. Know that I will support each of you in your mathematical journey because math is for *everyone*.

What can you do if someone is creating an unwelcoming environment in this classroom?

1. Talk to me. I will do my best to work with the individual who is creating an issue and resolve it. If I can't do this, I will talk to someone at the university who can resolve this. If I'm creating the problem, I will listen to you and do my best to correct my behavior.
2. If you don't feel comfortable talking to me, my supervisor is Mike Price (mprice@uoregon.edu).
3. Talk to a university official. You can find more information about your options at `https://respect.uoregon.edu`, `https://safe.uoregon.edu`, and `https://investigations.uoregon.edu`. You can also contact the non-confidential Title IX office/Office of Civil Rights Compliance (541-346-3123) or Dean of Students offices (541-346-3216) or call the 24-7 hotline 541-346-SAFE for help.

1.2 My Reporting Obligations

I am a student-directed employee. In short, this means that I listen to your request when deciding whether or not to report something that you disclose to me to the university. For detailed information about my reporting obligations as an employee, please see my Employee Reporting Obligations at `http://titleix.uoregon.edu/employee-reporting-obligations`. I am also a mandatory reporter of child abuse. You can find more information about the Mandatory Reporting of Child Abuse and Neglect at
`http://hr.uoregon.edu/policies-leaves/general-information/mandatory-reporting-child-abuse-and-neglect`

1.3 Mental Health and Well Being

College can be overwhelming in a number of ways. If you are struggling with your mental health and need some deadline flexibility, talk to me. You can also find support through the Duck Nest (`https://health.uoregon.edu/ducknest`) and through University Counseling Services (`https://counseling.uoregon.edu` or 541-346-3227). I've been to UCS and I had a really positive experience with them.

1.4 Academic Conduct

You are free to work with others when studying or doing homework. Unless explicitly instructed otherwise, however, you must submit your own work. For a full description of academic misconduct, see the Student Conduct Code at `https://policies.uoregon.edu/vol-3-administration-student-affairs/ch-1-conduct/student-conduct-code`. Academic misconduct will be reported to the university and it will result in a zero on the assignment on which academic misconduct occurred. Multiple or egregious instances of cheating will result in an 'F' in the course. *This policy is non-negotiable and I am not willing to discuss alternate consequences.*

1.5 Accessibility

For those of you who are currently registered with Accessible Education Center for any kind of accommodations, please communicate with me about this during the first week of the term so that we can design a plan for you. If you need learning accommodations but are not registered with the AEC, talk to them as soon as possible. It is much more likely that measures can be taken to provide adequate accommodation if the organization is done through AEC. I have attempted to provide documents that are accessible. Please let me know if you need additional accommodations. You can find the AEC at `https://aec.uoregon.edu/`.

1.6 Zoom Etiquette

Video

While I understand that some of you will have a reason to have your video off when meeting over Zoom, I request that you have your video on during lecture if you are able.

Audio

Please mute your audio when not speaking. Background noise is especially distracting during Zoom meetings.

Privacy

I will not record any Zoom meetings.

2 Class Meetings

9:00–9:50 AM in Columbia 044 every Monday, Tuesday, Wednesday, and Friday.

3 Office Hours

Office hours are your chance to ask me questions! For the first three weeks of the term, office hours will be held remotely. Three weeks into the term, I will reevaluate this decision and perhaps change some of my office hours to being in Fenton.

I'll be in a Zoom meeting at the times listed on page 1 of the syllabus and if you show up, I'll do my best to answer your questions and help you understand the course content. You don't need to make an appointment to attend office hours. If you can't attend any of my office hours and my schedule permits, I'm also happy to meet with you individually over Zoom. Just send me an email asking to meet with me and I'll let you know if/when I'm available!

Edit: Monday office hours are now in-person! Find me on the top floor of Fenton (probably in the atrium).
Monday Meeting ID: none
Wednesday Meeting ID: 922 6474 1602
Thursday Meeting ID: 960 4095 9502
Password (same for all): NorL?

To help you remember the password, it's an abbreviation for "Newton or Leibniz?" Newton and Leibniz historically feuded over which of them discovered calculus first and whose work was...derivative...

You can access all of the scheduled class Zoom meetings in the "Zoom meetings" tab on Canvas.

4 Materials

4.1 Textbook

The primary text will be *Calculus Volume 2* by Herman and Strang. This is a *free* textbook which you can access online at the following link: `https://openstax.org/details/books/calculus-volume-2`. I recommend downloading the .pdf file so that you have offline access to the textbook. You are also welcome to purchase a physical copy (they're around $30), but this is unnecessary. We will briefly use *Calculus Volume 1* by Herman and Strang, which you can find at `https://openstax.org/details/books/calculus-volume-1`.

4.2 A "Scanner"

Every assignment (mostly homework) that you submit to me on Canvas should be a *single* file in .pdf format. The program I use to grade only allows me to mark .pdf documents. There will be a 5% penalty for submitting files that aren't in .pdf form or for submitting multiple files. Most scanners have the option of saving scanned files as .pdfs. If you don't have access to a scanner, the Microsoft OneDrive app will scan things for you (and upload them to the cloud so you can quickly access them on your computer). We have unlimited storage on OneDrive through UO, so I recommend checking this option out. It even works fine on Apple devices.

4.3 A Calculator

A scientific calculator ***without*** calculus functions.

- My personal favorite calculator is the TI-30X IIS. I've also heard good things about the TI-34 Multiview and the TI-30XS Multiview.
- Graphing calculators will *NOT* be allowed on quizzes and exams. They may be helpful for homework, but you are expected to show your work and you are expected to be able to do each assignment without a graphing calculator.
- The TI-36X Pro and the Casio fx-115ES PLUS are *NOT* allowed on quizzes and exams since they can do symbolic derivative calculations.
- If you have a question about whether your calculator is allowed, please ask!

4.4 In-Class Access to Socrative

Socrative is a free online platform for me to poll the class to see how we are doing (see section 7.2: Participation). You will need a device capable of connecting to the internet with you in class.

If your device of choice is a phone, you can download the "Socrative Student" app. If your device of choice is a computer, you can go to `https://b.socrative.com/login/student/` in your browser of choice.

If you do not have smartphone or laptop access in class, please talk to me! We'll either figure out an alternate way for you to access Socrative or we'll arrange an alternate way for you to participate in class.

5 Tentative Schedule

Here is my goal for the material we will cover each week. Sections marked with an asterisk (*) are sections from *Calculus Volume 1*.

Week	Section(s)
1	1.1
2	1.1–1.3
3	1.3, 4.10*, 1.4–1.5
4	1.5–1.6
5	2.1–2.2

Week	Section(s)
6	2.2–2.3
7	2.3, 2.5
8	2.5, 3.1–3.2
9	3.4, 3.7
10	3.7, 4.1–4.4

6 Learning Outcomes

By the end of the course, a successful student should be able to:

- Set up and evaluate formulas for Riemann sums, given the function, interval, and number of rectangles
- State and use the fundamental theorem of calculus
- Evaluate integrals of polynomial and exponential functions, as well as sine and cosine.
- Evaluate integrals using substitution and integration by parts
- Use standard trig identities where appropriate as part of integral computations for some trig functions
- Interpret the area between two graphs as an integral
- Set up one-variable integrals that represent the solutions to a variety of modeling problems.
- Evaluate improper integrals
- Compute volumes of surfaces of revolution using both the disk and shell methods and recognize which method is most appropriate to a given problem
- Compute average values of functions over a closed interval
- Determine if a given function is a solution to a given differential equation
- Write down a linear differential equation that models a given situation that is described in words, typically where the rate of growth is a linear function of the amount

- Find general and particular solutions to basic separable differential equations
- Evaluate integrals using appropriate trigonometric substitutions?—if time
- Evaluate integrals using partial fraction decomposition?—if time

7 Grading

Grading will be determined according to the following scheme:

Professionalism	5%
Participation	5%
Quizzes	10%
Written Homework	10%
Webwork	10%
Oral Presentation	10%
Midterm Exams (2)	15% each
Final Exam	20%

Standard grade assignments will be made (e.g. grades in the 80% to 89% range will be Bs, those in the 70% to 79% range are Cs, etc.) Plus and minus grades will be awarded in the upper and lower 2% of a bracket. (e.g. a grade of B+ is awarded for an 88% or 89%; B- for an 80% or 81%). I reserve the right to (not) apply a course adjustment to grades at the end of the term.

Calculating Your Grade At the end of the term, your grade is calculated according to the following formula. If you have an ℓ% in professionalism, p% in participation, a q% on quizzes, a h% in written homework, a w% in webwork, an r% on the oral presentation, e_1% and e_2% on the two midterm exams, and f% on the final exam, then your final grade will be

$$0.05\ell + 0.05p + 0.1q + 0.1h + 0.1w + 0.1r + 0.15e_1 + 0.15e_2 + 0.2f \quad \%$$

If you want to calculate your grade in the middle of the term, only the categories which have grades play a role. In this case, do the above computation, but divide the total by the sum of the weights for the relevant categories. For example, if you just took the first exam and haven't done the oral presentation (and so you only have grades for professionalism, participation, quizzes, homework, webwork, and exam 1 in the gradebook), your grade will be

$$\frac{0.05\ell + 0.05p + 0.1q + 0.1h + 0.1w + 0.15e_1}{0.05 + 0.05 + 0.1 + 0.1 + 0.1 + 0.15} \quad \%$$

7.1 Professionalism

I assume that you will behave in a mature and professional manner in this class throughout the term. This means that everyone starts with 40/40 (there is one point per day of class, including the final exam) in this category on day 1. You cannot earn points in this category; however, you can lose points in this category. Examples of behavior that can lose you points include

- being a disruption in class
  - You MUST wear a face mask in class that covers your mouth AND nose. There are no exceptions to this policy.
  - If you wish to spend time on your phone or computer in class, please sit in the back of the classroom so as not to distract your classmates.
- ignoring a request from me or another student to stop being a disruption or distraction
- creating an unwelcoming environment in class

It *is* possible to receive a negative grade in this category. I can and will deduct one point from this category every time I see you wearing your face mask improperly during an in-person classroom function.

7.2 Participation

Participation will occur in the form of weekly question-asking and question-answering. Each week, you will have two different options for how you can earn this credit.

1. Answer all of the "poll questions" that week (I'll still give you credit if you miss one poll question, but not if you miss two or more).
2. Ask or answer a math question. This can occur in office hours or on the weekly Canvas discussion. If you ask a particularly good question or provide a particularly insightful answer, you may receive extra credit.

7.2.1 How to Use Socrative

Once you access Socrative (see section 4.4), you will be prompted to join a classroom. You will enter the code "KNAPP252"

After joining the classroom, I will start a survey. At this point, you will be required to login *USING A CODE NAME* rather than your actual name (for FERPA reasons). I will email you your personalized code name during week 1. You will then be able to enter your answers to the poll questions during class.

7.2.2 How to Ask a Good Question

What are some examples of questions or discussion responses that will get me credit?

- "Could you go over this step again? I'm not sure how you got [answer]."
- "Why did you take off points on number 3? I don't see my mistake."
- "I'm struggling with number 2 on the homework. I tried [some strategy], but it doesn't seem to be getting me anywhere. Can I get some help?"
- "Will you go over an example of [some type of problem]?"
- "Does what we're learning in class relate to [this] at all?"
- "Can someone give me an example of a function with [this property]?"
- Responding to a posed question with a full explanation or a picture of the worked out solution
- Correcting or adding on to a response/solution given by another student
- "I think this is true. I found a solution from this source: [include link to reputable and relevant source]."

What are some examples of questions or discussion responses that will *not* get me credit?

- "How do you do number 2 on the homework?"
- "What do I need to study for Friday's exam?"
- "When is the next homework assignment due?"
- "Did anyone else think number 4 on the exam was difficult?"
- "Does this count as my participation for the week?"
- Responding with Yes or No with no clarification or explanation
- Responding with "I'm not sure" or "I was also wondering about this"
- Responding with an answer already given by another student
- Responding with an answer pasted word-for-word from another source.

7.3 Written Homework

Twice weekly homework will be assigned out of the book (and I may write a problem or two of my own if I want to supplement the book problems). Assignments will typically be due at 11:00 am every Wednesday and Monday with a few exceptions. I will drop your lowest two homework grades.

Note: Canvas will tell you that the assignments are due on Tuesday and Sunday nights at 11:59 pm. This is because people tend to miss morning deadlines. However, since there's no chance I'll be grading your homework at midnight, there's no reason you can't turn it in up until the next morning (when I may start grading). The assignment will remain available and you can submit your homework without penalty until 11:00 am. I highly recommend submitting some work the night before an assignment is due and then submitting any necessary revisisions before 11:00 am on the day the assignment is due. It's not worth missing an assignment because you wanted to revise one problem in the morning and then slept through your alarm.

Homework should be uploaded to Canvas in the corresponding assignment. Your homework needs to be a *single* file in .pdf format.

A note on homework quality: *Your written homework should be neat and well-organized. This means that your work should clearly show your thought process in solving the problem and you should use complete sentences, good style, no abbreviations, etc. Your homework should look like what I would write if I were making a solution guide for you. You do not need to re-write the problem statement.*

7.4 Webwork

The Webwork assignments can be found here: `https://webwork.uoregon.edu/webwork2/Math252-13973/`

Webwork will typically be due twice a week at 11:59 pm on Tuesday and Sunday nights. I drop your lowest webwork score.

7.5 Oral Presentation

Once during the term (at *any* time during the term—don't put this off!), you will need to meet with me individually over Zoom or in person to present a problem. You will have a list of problems to choose from, covering various topics in the course. More detailed instructions, suggestions for how to accomplish this, a rubric, and a complete list of problems are contained in the "Oral Presentation" document on Canvas.

7.6 Quizzes

There will be one quiz in every non-exam week (including week 1). Quizzes will take place in the last 20 minutes of class on Fridays. The quiz in week n will cover the Monday-through-Wednesday material of week n.

7.7 Exams

There will be two, in-class, midterm exams. The first exam will occur on *Friday, October 22 (week 4)* and will cover Chapter 1. The second exam will occur on *Friday, November 12 (week 7)* and will cover Chapter 2 (and section 3.1 if we get there in time). You will be allowed to bring one 8.5×11 inch sheet of paper with any notes you like to each midterm exam.

The final exam will be offered on *Friday, December 10 at 10:15 AM* and it will be cumulative. You will be allowed to bring two 8.5×11 inch sheets of paper with any notes you like to the final exam.

After each midterm exam (not the final exam), you will have the opportunity to submit exam corrections in return for a third of the points you missed back. For example, if you miss six points on a question, you can earn two of those points back by submitting a completely correct solution to that question. In order to make grading the corrections cleaner, partial credit does not apply for exam corrections—each problem is all or nothing.

7.8 Absences

IF YOU ARE SICK, STAY HOME. This includes illnesses other than COVID. No one wants your germs.

During the term, you may miss class for any reason at all without telling me. If you want to keep a good grade, however, it would behoove you to...

- ...find a way to make up your participation credit for that week. See 7.2 for more details.
- ...get any announcements for the day from me or one of your peers.
- ...get any notes for the day from Canvas or one of your peers.
- ...contact me if you miss a quiz or exam.
- ...contact me if you are going to be absent for an extended period of time.

7.9 Late Work/Make Up Work

No late work will be accepted. I drop your lowest homework and webwork grades to account for this.

If you need to miss a quiz or exam, you need to...

- ...contact me as soon as you know you will miss the quiz or exam
- ...choose an option for how you wish to make up the exam
  - You may choose to take an oral version of the exam over Zoom.
  - You may choose to take a make-up version of the exam in my office once you are completely well.

8 Things I Expect From You

- Communicate with me. Tell me what problems you're having and how I can help. This is why there's a "Feedback" discussion on the Canvas page—so you can give me suggestions about how I can improve the class! But this is only effective if you actually give me feedback.
- Read the textbook! It is incredibly helpful to have an idea of what's going to be talked about in class before you show up to class. Even just skimming the textbook ahead of time to know what terms you should expect to hear can turn difficult lectures into easy lectures.
- Spend the appropriate amount of time on this class. This is a 4 credit-hour course, which means that you should expect to spend 12 hours each week, including class time, for this class. If you find that you are not spending this much time on this class just by attending class, doing the homework, and reading the book, find other ways of spending time on this class: do extra problems out of the textbook, study with a group, or attend office hours.

9 Things You Should Expect From Me

- You should expect me to want you to learn. A trait that I find to be unfortunately too common, especially at large research institutions, is that instructors aren't invested in their students' success. You can expect me to care about your education and your learning of the material.
- You should expect me to want you to not hate math. I think math is pretty neat and I want you to at least not hate the subject. So if you find yourself frustrated with a particular topic or wondering why we're covering certain material, please ask! I'll try to provide you with some interesting reason why people care about this stuff.
- You should expect me to communicate clearly with you about what I expect from you. If you have questions about how I grade or how I expect you to write your answers, please ask!
- You should expect me to have good reasons for setting the course policies to be what they are. I've been tinkering with course policies for over two years now and I'm still working on creating good course policies that help you learn. That said, distance learning is new for me, too, meaning that some of my policies might not work as well with this style of class. If you have questions about why course policies are the way they are, please ask!
- You should expect me to post solutions to assigned problems (homework, lecture guides, exams). I forget to post solutions more frequently than I'd like to admit. Please email me when I forget to post solutions to something.
- You should not expect me to be perfect, but you should expect me to make amends when I make mistakes. If you think I've fallen short of a duty that I have or of one of these expectations, please let me know and I'll make up for that mistake in a reasonable way.

10 Tips For Success

- Know the vocabulary. I include vocabulary sections in my exams and have an oral presentation because math is a language—in order to properly do math, you need to know how to read it, write it, and speak it.
  - On Canvas, you can find something called the "Frayer model" to help you learn vocabulary words with which you are struggling. The best way to learn vocabulary is to internalize each vocab term and understand why the definition is the way it is rather than merely memorizing the sequence of words which comprises its definition.

- Follow your work through to its logical conclusion. Consider the question "Find the solutions to $x^2 + 6x + 5 = 0$" and the following four responses

  1. Find the solutions to $x^2 + 6x + 5 = 0$

  $$(x + 5)(x + 1) = 0$$
  $$x = -5, -1$$

     – This solution is correct and is worth full credit.

  2. Find the solutions to $x^2 + 6x + 5 = 0$

  $$(x + 2)(x + 3) = 0$$
  $$x = -2, -3$$

     – This solution has an error in the factoring, but the conclusion is correct based on the incorrect factoring.
     – As a result, this solution is worth partial credit.

  3. Find the solutions to $x^2 + 6x + 5 = 0$

  $$(x + 2)(x + 3) = 0$$
  $$x = -5, -1$$

     – This solution has an error in the factoring, but mysteriously gets the correct numeric answers despite this.
     – This solution is worth no credit since first, the factoring is incorrect and second, the solutions for x do not follow from the written factorization.
     – This sort of thing is awfully suspicious when I'm grading. If you do wrong work that results in the right answer, it looks a lot like you weren't sure what was going on, made up some work, then looked up the answer and copied it down.

  4. Find the solutions to $x^2 + 6x + 5 = 0$

  $$x = -5, -1$$

     – The fourth solution, while correct, does not show any work and so is worth no credit.

  If you get to a point in the problem where you get an answer that you know to be unreasonable (e.g. you find that a fence should be -5 feet long), you can write a note saying "I know this answer doesn't make sense, but I can't find my error" in order to not lose points for writing down an absurd answer.

- *I DO NOT AWARD CREDIT FOR CORRECT ANSWERS.* Every point that you could possibly earn in this class (except for the accuracy category in the oral presentation) is for showing your work and demonstrating good reasoning. If you have good reasoning, but make a calculator error in a step, you'll still get full credit. If you get the correct answer after some questionable work, you can expect to lose a lot of credit.

- Work with other students in the class periodically. If you are struggling, you may find that other students have a better idea of what you're struggling with than I do, since they've learned the material more recently than I have. If you (think you) are doing well, you will find that explaining the concepts to other students will solidify your understanding of the material and identify gaps in your knowledge that you didn't know were there.

- Put in the appropriate time and quality of work. If the time that you are spending on this class is broken up by distractions like roommates, TV shows, or computer or cell phone use, you will not get the same benefit from that time as you would have gotten without the distractions.

- Make use of office hours. You don't have to have an appointment to attend office hours—you can just show up! I think there's a perception among undergraduates that instructors don't like holding office hours and whether or not this is true for other instructors, it is not true for me! I find office hours to be enjoyable since I can have more of a conversation with you, rather than lecturing at you as I do in class.

- Free tutoring is available. There are two primary math tutoring resources on campus, the Math Library and the Teaching and Academic Engagement Center. You can find information about your tutoring options at the TAEC at `https://engage.uoregon.edu/tutoring`. You can find information about your tutoring options at the math library at `https://library.uoregon.edu/scilib/mathlib`.