MATH 2101 - Calculus III 1:00-2:05 MWF. Room: Sci 2200

Instructor: Chris Atkinson
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Course webpage: https://ckatkinson.github.io/2101/
Office: Science 2340
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Office Hours: M 2:05-3:05, T 10-11, W 3-4, R 9-11*, F 10:30-11:30, or by appointment (*make appointment on my Google calendar for Thursday office hours)

Textbook:"Multivariable Calculus: Early Transcendentals," Sixth Edition, by James Stewart. If you somehow have obtained the seventh edition, that is also fine; they are nearly identical. I'll give problem numbers for both if necessary.

Prerequisites: Students should have mastered the topics of Calculus I and Calculus II.

Topics covered: We will cover most of chapters 12-16. This includes vector geometry and arithmetic, functions of more than one variable, extension of the derivative to functions of more than one variable, multiple integration, and the calculus of vector fields. For a detailed list of topics, see https://ckatkinson.github.io/2101/2101-topics.pdf.

Time commitment: University policy says "one credit is defined as equivalent to an average of three hours of learning effort per week (over a full semester) necessary for an average student to achieve an average grade in the course". Our course is a four–credit course, meeting approximately four hours per week: 4 credits times 3 hours/week/credit - 3 hours/week in lecture = 9 hours/week outside class. Thus, you are expected to spend 9 hours per week working outside of class, reading the textbook and working problems. Since no one wants to be average, you should expect to spend more than 9 hours per week thinking about class.

Homework:

- **WeBWorK:** WeBWorK is an online homework system. You can find our section either via the link on the course webpage or by going directly here: http://webwork.morris.umn.edu/webwork2/S19Calc3_Atkinson/. A few problems will be assigned for each section of the textbook that we cover. These problems will be mostly of a computational nature and are intended to give you practice working though basic examples. These assignments will usually be due one minute before the next meeting of our class.

- **Practice problems:** I can tell you what to think, but I can't think for you. To learn how to think about linear algebra (or anything else) you need to think about the ideas yourself. To do so, you should work though many example problems.

  The document at https://ckatkinson.github.io/2101/2101-topics.pdf has a list of the sections of the textbook that I plan to cover. In each row, I've listed a selection of practice problems. After we cover a section in class, you should work through as many of these

problems as you need to to master the topic. In addition, when I write the exams, I consider any problem similar to assigned practice problems to be fair game.

These problems will not be formally collected or graded, but see the following section to see what you will be turning in. You should come talk to me, talk to your classmates, or email me about problems that you need help with.

- **Discussion problems:** After each class meeting, I will post a short subset (usually just two or three) of the practice problems on the course webpage. These are the discussion problems. I expect you to work together in small groups to solve these problems. Working collaboratively allows for you to help each other out when you get stuck and to learn from explaining your thoughts. You should produce a neat write-up to the solution of each of these problems. You should also be prepared to present your solutions to the class.

  During the first $15 - 20$ minutes of class, we will discuss the discussion problems. You will have some time to compare your solutions. I will walk around the class to answer questions, choose presenters, and check that students have completed the work. We will typically have one or two quick presentations of solutions. I will keep track of who has presented. Everyone should expect to present occasionally.

  Each Friday, I will collect your work from discussion problems from the week. You should turn in the neatly written and complete solutions to the problems. These will be graded for completion, correctness, and exposition. I'll also give feedback on your work.

  Your overall grade for the discussion problems will be based both on the problems you hand in and on participation. Participation will be assessed as follows: each student starts with a bank of three *participation points*. There are three different possible *participation infractions*:

  1. Absence: an unexcused absence during the discussion portion of class.
  2. Unpreparedness: arriving to the discussion session without having given an honest effort on the discussion problems.
  3. Non-presentation: refusing to give a presentation.

  A student will lose one participation point if a participation infraction is committed. Lost participation points can be earned back by turning in a complete, neatly written solution set to an **entire section** of practice problems (see list of practice problems). If the list of practice problems includes non–specific directions such as "skip around", your submitted set must include at least 15 problems. I will accept such a set at any point before the last day of instruction. You may only submit a solution set for a given section once (but feel free to submit any number of sections).

  At the end of the semester, the balance of your participation point bank will be used to determine a *participation multiplier* for your discussion problem grade. I will multiply your grade for the collected discussion problems by the participation multiplier. The following table describes how the multiplier will be determined:

Point Balance	Multiplier
3	1.025
$0, 1, 2$	1
-1	0.9
-2	0.75
-3	0.5

Exams: There will be three in–class exams and a cumulative final. Calculators will not be allowed during exams.

The exams are scheduled as in the table below.

	Date
Exam 1: Chapters 12 and 13	Friday, 2/22 (Fifth week)
Exam 2: Chapter 14	Friday, 3/29 (Tenth week)
Exam 3: Chapter 15	Friday, 4/26 (Fourteenth Week)
Final: Comprehensive	Thursday, 5/16, 8:30-10:30am

Grading: The university's policy for grades can be found at: http://policy.umn.edu/Policies/Education/Education/GRADINGTRANSCRIPTS.html

I grade homework assignments and exams with the above guidelines in mind using the following numerical scheme. Your overall score will be rounded to the nearest integer. I reserve the right to change the grading scale at any point, but will not increase the requirements for any letter grades.

Letter	Percentage
A	95-100
A-	90-95
B+	86-89
B	83-86
B-	80-83
C+	76-69
C	73-76
C-	70-73
D+	65-69
D	60-64
F	< 60

If you are taking the course S-N, then you need 70% to earn an S.

The components of the course will be combined to calculate your grade as follows:

WeBWorK	15%
Discussion problems	15%
Exams	45%
Final Exam	25%

Although I will not be posting grades online, feel free to ask at any point about where you stand in the course.

Extra Credit: There will be no extra credit.

Univeristy policies: See http://policy.umn.edu/education for the official university policies on education. I will adhere to these policies.

Late work and missed exams: I will only accept late work under exceptional circumstances. Please talk to me as soon as possible if you miss a deadline.

Makeup exams will only be given in the case of legitimate absences as defined by the official university policy: http://policy.umn.edu/Policies/Education/Education/MAKEUPWORK.html. Legitimate absenses must be supported by appropriate documents unless otherwise specified by university policy.

If you have a scheduling conflict and will miss an exam for a documented reason, let me know as far in advance as possible so that we can make arrangements for you to take the exam at another time.

Disability Accommodations:

The University of Minnesota views disability as an important aspect of diversity, and is committed to providing equitable access to learning opportunities for all students. The Disability Resource Center (DRC) is the campus office that collaborates with students who have disabilities to provide and/or arrange reasonable accommodations.

- If you have, or think you have, a disability in any area such as, mental health, attention, learning, chronic health, sensory, or physical, please contact the DRC office on your campus (UM Morris 320.589.6178) to arrange a confidential discussion regarding equitable access and reasonable accommodations.
- Students with short-term disabilities, such as a broken arm, should be able to work with instructors to remove classroom barriers. In situations where additional assistance is needed, students should contact the DRC as noted above.
- If you are registered with the DRC and have a disability accommodation letter dated for this semester or this year, please contact your instructor early in the semester to review how the accommodations will be applied in the course.
- If you are registered with the DRC and have questions or concerns about your accommodations please contact the Coordinator of the Disability Resource Center.

  Additional information is available on the DRC website: http://www.morris.umn.edu/academicsuccess/disability/, or e-mail hoekstra@morris.umn.edu

Here is a link to more policy statements about syllabi: www.policy.umn.edu/Policies/Education/Education/SYLLABUSREQUIREMENTS_APPA.html

Student Learning Outcomes This course is designed to partially satisfy the following *UMM Student Learning Outcomes*: 1a, 1c, 2b, 2e, 2g, 4b, 4c

See http://www.morris.umn.edu/committees/Curriculum/Learning_Outcomes_Approved.pdf