

Multivariable Calculus: Math 236

MWF 10:30 - 11:20

DDS DC: Room 1313

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Prerequisites Calculus I and II, a sense of humor, and (preferably) an introductory physics class: This is the course that puts the **flux** back into **flummoxed**. The willingness to work hard to understand and implement new concepts. The self-discipline to read the textbook regularly and critically. The self-possession to aggressively ask questions when you don't understand something. The textbook is the free online book, Apex Calculus, v.4.0.

<https://www.apexcalculus.com/>

Two Principles First, your learning is in your head, not mine: You are responsible for own education. This is a liberating principle. Second, learning is a continuum that starts before class with the required reading, is enhanced by class interactions, and spirals into the future with Homework, Discussions with Friends and Classmates, and Late Night Musings.

Course Objectives First, as you saw in Calc II, Multivariable generalizes one-variable calculus; second, it introduces high-powered modern concepts and notation; third, it applies the former two notions to physics. Calculus essentially was invented to do physics—that is the context in which it makes sense. Indeed, this class is the doorway to E & M and differential geometry, hence general relativity.

Homework, Quizzes, etc. There will be 12 homeworks assigned over the course of the semester, graded on a scale of 0–10, and the lowest two scores will be dropped, yielding 100 points. They will be hard. You may work together and even hand them in jointly! (Unless I change my mind.) The homework is normally due at 11:59pm, Eastern Time Zone, on days marked on the schedule. (I won't check until the next morning.) **There is no such thing as 'late homework.'** If people straggling in late begins to annoy me, there will be quizzes. Also: no phones. Really.

Exams There will be two exams, and I haven't decided if they'll be in-class, which is hard, or take-home, which is also hard, albeit in a different way. If they are in-class, for each exam you may use one 8.5 x 11 sheet of paper with anything written on it—both sides! The final exam time slot is not yet determined, but it will be during the week of May 9th. **Make-up exams require documentation of extraordinary circumstances.**

Grading Policy The exams will be graded on a scale of 0-100. At the end of the term, your total number of points (out of 300) will be added together to give your final grade. All points are the same; 'exam points' don't count differently than 'homework points.'

It's important to note that this does not mean that, for example, 270 points and above guarantees an A: Depending on the class, sometimes I curve up, sometimes I curve down, and sometimes I don't curve at all. (Last time I taught the course, 280+ earned an A.) Extra points can be earned in the following fashion: 3 points for catching me in a mathematical or spelling error while I'm using the blackboard; and 5 points for coming to office hours (points given only on first visit). Also, attendance and classroom participation will only raise my opinion of you, which can affect your grade, so ask and answer questions. If you wish to argue about points assigned, you must do it within a week of the return of the work in question. Furthermore, I reserve the right to *lower* your points if I think you are merely haggling.

Honor Code Violations Over the years, I have caught many violations of the Honor Code. The punishment tends to be much worse than the grade received for handing in a bad assignment or test. There has been a surge of cheating incidents in the past few years, and when we uncover them, we respond mercilessly. Your first assignment is reading the Wheaton Honor Code and related materials, then sending me a note acknowledging having read them. Finally, as per student initiative, for all course work, students must write and sign the following: "I have abided by the Wheaton College Honor Code in this work."

As noted above, your first homework assignment involves the Honor Code.