

Metric Spaces and Topology

Math 413/513, Fall 2023

Lecture: MWF 9:00–9:50, B042 Price Science Commons
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Web Page: <http://pages.uoregon.edu/adding/courses/413/>
Text: Gamelin and Green, *Introduction to topology, second edition*

Grading. Your grade will be based on the following:

- **Homework (25%).** On Mondays, upload your homework through Canvas: either scan it in, or take a picture with your phone, or if you type, upload a PDF. You'll be assigned two of your colleagues' homeworks read, and give feedback by Wednesday. By Friday, you'll submit a revised version of your homework based on feedback from your colleagues and the grader.

I encourage you to work with other students, but you must do the writing yourself, in your own words. If you write by hand, use pencil, because you will inevitably want to erase something. If you type, use \TeX , not Microsoft Word. I will drop the lowest score.

- **First Midterm (20%).** Friday, October 27, in class.
- **Second midterm (25%).** Friday, November 17, in class.
- **Final Exam (30%).** Tuesday, December 5, 10:15–12:15, in the usual room.

Graduate students (513) should do all the optional problems on the homework, and will have an additional reading about the history of topology.

Learning outcomes. The successful student will come away understanding continuity and convergence both via δ and ϵ and via open sets, completeness, connectedness, and especially compactness, both formally (how to use the axioms) and in examples. The student will both acquire and demonstrate this understanding by *writing proofs*. Especially important will be writing in paragraphs, rather than in strings of symbols; keeping in mind the audience for your writing, which is your peers; and “making the easy parts look easy,” that is, avoiding belaboring the routine parts of the proof so that the real content can shine through.