Metric Spaces and Topology

Math 413/513, Fall 2024

Lecture:	MWF 1:00–1:50, 192 Anstett Hall
Instructor:	Nick Addington
Office:	208 Fenton Hall
E-mail:	adding@uoregon.edu
Office Hours:	Thursdays 1:00–3:00, and by appointment.
Web Page:	http://pages.uoregon.edu/adding/courses/413/
Text:	My notes, available on Canvas and on my web page.
	You can also consult Gamelin and Green's
	Introduction to topology, second edition.
	An online version is available through the library's web site.

Grading. Your grade will be based on the following:

- **Reading (5%).** Due Sunday evenings on Canvas. Give a *short* summary of what you read, and one or more questions that you would like me to answer. I'll also be grateful if you point out any typos you find in the notes. These will just be graded on completion.

- **Homework (20%).** Due Fridays at the beginning of class, either on paper or on Canvas. 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, November 1, in class.

- **Second midterm (25%).** Friday, November 22, in class.

- **Final Exam (30%).** Tuesday, December 10, 2:45-4:45, in the usual room.

Graduate students (513) should do all the optional problems on the homework.

Learning outcomes. The successful student will come away understanding continuity and convergence both via δ and ϵ and via open sets, completeness, 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.