1125-M5-1819 **Erin E Bancroft*** (`eebancroft@gcc.edu`). *Contraposition, Complements, Counterexamples, and Counting: Enumerative Combinatorics as an Introduction to Proof Course.*

The primary objective of an introduction to proofs course is for students to learn the skill and art of writing mathematical proofs. This is made difficult by the relatively little mathematics students know when they take the course, typically as sophomores. One option is to limit the course topics to those that do not require significant background knowledge. However, this can result in a course that feels fragmented or is uninteresting. Alternatively, students' first exposure to proof writing may come in a more unified course such as algebra or analysis. In this case, the abstractness of the subject and lack of a firm foundation can leave students floundering. In this talk I describe a framework for an introduction to proof course that addresses both of these concerns: enumerative combinatorics. Besides providing a natural structure for discussing sets, functions, and proof, framing the course in the context of enumerative combinatorics makes it engaging and accessible for students. I will also discuss how I structure the course, the textbooks and resources I use, and the evolution of the course to this point. (Received September 19, 2016)