

1125-N1-1475 **Darryl Chamberlain Jr.*** (dchamberlain2@student.gsu.edu) and **Draga Vidakovic**. *A first lesson on proof by contradiction: Developing proof comprehension in a transition-to-proof course*. Preliminary report.

Proof is central to the curriculum for undergraduate mathematics majors. Typically, students are first introduced to formal proof in a transition-to-proof course. This course is designed to facilitate students' learning of various proof techniques in order to develop both the ability to construct mathematically correct proofs and a sound understanding of proof in general. Despite transition-to-proof courses, students continue to exhibit difficulties constructing and comprehending proofs in higher-level mathematics courses, such as Abstract Algebra and Analysis. In particular, proof by contradiction has been isolated as one of the most difficult proof methods for students to construct and comprehend. Yet, there is little research to date on student comprehension of proof by contradiction. The purpose of this paper is to report preliminary results on video recorded in-class teaching sessions with two sections of a transition-to-proof course during the Fall 2016 semester. Results from this study will provide empirical data that may be used to improve instruction on proof by contradiction in transition-to-proof courses. (Received September 17, 2016)