1125-P1-322   **Jacqueline A Jensen-Vallin*** (`jacqueline.jensen@lamar.edu`). *Examples and Counterexamples in Abstract Algebra.* Preliminary report.

Inspired by the book *Counterexamples in Topology* and conversations with Robert Vallin, my abstract algebra course is designed around examples and counterexamples. In particular, my students are expected to memorize definitions, and are quizzed on these daily. During class time and as part of many homework assignments and all tests, students are expected to develop and explain examples to satisfy each new definition and counterexamples which fail to satisfy those definitions. For instance, students should be able to recall or construct a group which is abelian but not cyclic (or explain why no such group exists). This encourages students to understand definitions deeply in a way that helps students write stronger proofs. We will discuss these techniques, and examine some data and examples of student success during the Fall 2015, Spring 2016, and Fall 2016 semesters. (Received August 26, 2016)