Specifications (“specs”) grading is a competency-based grading system proposed by Linda Nilson, which is of increasing recent interest among mathematicians due to perceived weaknesses in traditional course assessment structures. Specs grading promotes increased rigor by assessing student progress toward learning objectives on a pass/fail basis according to clear specifications, with no partial credit awarded. In addition, students have opportunities for revising work to eventually meet the desired objectives. Final grades are earned based on the number of learning objectives a student has met by the end of the semester. Thus, students may choose to work toward a grade goal by selecting the number and level of objectives they wish to pass; this has the added benefit of reducing faculty workload. I will discuss my course design and experiences implementing specifications grading in a first course in linear algebra. We will pay special attention to the types of alternative assessments which work well in a specs grading paradigm, including mastery-based testing and learning modules. (Received September 04, 2015)