The course that will be discussed is a computational linear algebra course that is taken before an introduction to proofs class by freshman and sophomore level STEM majors. Historically, this class has been a gateway course for mathematics majors, causing many of them to change majors while enrolled in this course. I previously taught the course using a traditional lecture style in 3 separate class sections over 2 different semesters (Spring 2015 and Fall 2016). In the Spring 2017 semester, I taught the course to 2 separate classes using a flipped classroom model. During this talk, I will share the structure and implementation of the flipped classroom environment within the course, including both expectations and evaluation methods. Additionally, I will present data on the increase in grades when the flipped classroom environment is compared with the traditional lecture classroom environment, as well as share comparisons of student feedback in the open response section of the student evaluations for these different classroom experiences. (Received September 26, 2017)