I will describe my experience inverting a medium-sized multivariable calculus course at the University of Oklahoma. Students read sections of the textbook in preparation for class, and much of the class time was spent working on activities in groups. Class sessions were held in a technology-enhanced active learning classroom. I will describe the logistics of how this course was set up and discuss some of the advantages and challenges of teaching in this way. (Received September 16, 2014)