In this talk, we examine the results of employing an inverted or "flipped" class design in a transition-to-proof course for second- and third-year mathematics majors. We briefly review the extant research on transition-to-proof courses and focus particularly on Pintrich’s framework of self-regulated learning as a means of understanding student difficulties in such courses. Then we will overview the inverted classroom model of course design and its potential benefits in transition-to-proof courses. Finally, results from the redesign of a transition-to-proof class at the author’s university are given and discussed. (Received September 16, 2013)