Real Analysis is an upper level course often taken as an elective in the later stages of a student’s undergraduate career. At least one semester of a Real Analysis course is typically offered as part of the undergraduate mathematics curriculum at four-year institutions. Encouraged by research supporting the effectiveness of inquiry-based learning in undergraduate proof-based courses, a first attempt at employing IBL was made in an undergraduate real analysis course at a small college. Structure of the overall course, breakdowns of typical class periods, resources utilized, and modifications made will be discussed. Challenges and successes of teaching in an IBL fashion for the first time will be the focus, along with anecdotal evidence of changes in student’s attitudes and beliefs gathered from surveys and written assignments. (Received September 19, 2016)