At the University of Illinois all students scoring below 50 on the placement exam are placed into College Algebra. Thus students enter the course with very diverse mathematical needs and background knowledge. The challenge was to maximize student outcomes with minimal resources within the context of a single course. College Algebra was redesigned to a blended course: once a week large lecture, heavy use of ALEKS for learning and practice outside of class, and Piazza for communication. The redesign has been extremely successful in meeting the individual needs of all the students and we have seen improved success rates. As ALEKS adapts to each individual student’s learning and needs some students will spend 120 hours in the system over the course of the semester, while others may spend 30. Piazza has been added for communication and class discussion. There are 200 students in lecture and they often feel anonymous and removed from the instructor. Piazza has provided a place for whole class discussions and for students to communicate directly with each other. Though we are teaching this course with less people, less time, and less resources, the student experience and outcomes are more. (Received September 11, 2013)