After studying mathematics enrollment patterns at Ouachita Baptist University, the author led an effort to change the focus of the department’s College Algebra course from one designed as preparation for Calculus to one focused on problem solving and mathematical modeling. Almost immediately thereafter, the department received a call to develop the College Algebra course for online delivery as part of the University’s new online degree programs. In this paper, the author will discuss the motivations for changing the focus of the course, the foundational principles for the course redesign, the development process of the online course, and the lessons learned - both expected and unexpected - along the way. (Received September 16, 2014)