To assure that students in STEM fields entering Precalculus have the appropriate prerequisites, the University of Puerto Rico administers a math diagnostic exam to “at risk” entering freshmen where “at risk” is a score below 650 on the mathematics college entrance exam for Puerto Rico. The diagnostic exam focusses on elementary and middle school mathematics and students need to receive 50% or better in order to pass this exam. Currently, 58% of entering freshmen at the UPR cannot pass this exam. From 2008-2010, “at risk” students that failed the diagnostic exam were required to register for a semester long traditional classroom course. In an effort to see if results could be improved, starting in the fall semester of 2011, this traditional remedial course was discontinued and replaced with a three week all day, primarily online, remedial course that was normally taken the summer before entering the UPRM. Comparing the two approaches, we found that the online course allowed over 60% more students with math deficiencies to pass precalculus their first semester. This presentation will present these two courses along with an overview of performance both in the remedial course and in the subsequent precalculus course. (Received September 12, 2012)