

1056-M1-1542 **Daniel L McGee*** (mcgeedan@gmail.com), Department of Mathematics, P.O. Box 9018, University of Puerto Rico, Mayaguez, PR 00681-9018, and **J Maider Marin** (mayejudi@gmail.com), P.O. Box 9018, Mayaguez, PR 00681-9018. *Using Public Domain Software for Online Homework and Tutorials at the University of Puerto Rico.*

The University of Puerto Rico in Mayaguez(UPRM)recognized that failure and withdrawal rates in basic mathematics courses are the most significant reason that less than 50% of science and engineering students eventually graduate at the UPRM. Correspondingly, with the help of the department of education, it launched an initiative to improve student performance in precalculus and calculus courses. The initiative involved internet quizzes and tutorials that are administered with public domain web based software developed at the UPRM. Our final effectiveness study compared two groups that were fundamentally equal in all respects except use of the UPRM tools. The results were as follows. A B C D F W Calculus Students with UPRM Tools 11.65% 12.62% 27.18% 8.25% 19.42% 20.87% Calculus Students w/out UPRM tools 5.84% 4.38% 21.90% 9.49% 32.12% 26.28%

As can be seen from these results, the UPRM tools have been very successful. This presentation will show how the public domain UPRM tools were implemented, will present more thorough results and will invite other institutions to form a cooperative so that online homework and tutorials may be implemented using public domain programs with quiz questions and tutorials shared between institutions that create them. (Received September 22, 2009)