

College of Science (CSCI)  
North Science 135

See also attached curriculum map showing alignment of individual courses with Program Student Learning Outcomes.



competency with a spreadsheet program.

Possible ways to improve learning outcomes include:

- 1) a pre-assignment that gives students practice with necessary algebra skills,
- 2) a pre-assignment to develop skill with spreadsheets and graphing, and
- 3) further intensive work with data groups, with the instructor present.

A similar assignment will be used in-class and for assessment again in the future, and some or all of these recommendations will be implemented in order to improve students' quantitative literacy.

GEOL 4320 Hydrogeology – Spring 2015

The assessment focused on data analysis in a lab exercise that replicates Henri Darcy's famous experiment in which key parameters are measured and their relationship to groundwater discharge is surmised.

The Quantitative Literacy rubric was used to evaluate student work. Of 15 possible, overall scores ranged from 2 to 14 (for students who did not complete the assignment while credit was still possible, with an average of 4.6 and standard deviation of 4.1 (including two scores of zero). Only nine of 20 students who completed the assignment displayed at least the basic level of competency (score of 1) in all five areas of quantitative literacy; only three of 20 displayed competency at the mastery level (score of 2) in all areas. One student displayed an exemplary level (score of 3) in four of five areas of quantitative literacy. A thorough mastery of basic algebra and graphing is an expected pre-requisite for the course, but some students lack the basic preparation and others have the necessary preparation but their quantitative skills are quite rusty.

Possible ways to improve learning outcomes for this assignment are:

- 1) a pre-assignment that gives students practice with advanced algebra skills,
- 2) recommendations for math tutoring at ASC for students who do not perform well on a math skills pre-test given on the first day of class,
- 3) an additional, optional, session where students work on problems with the instructor present.

In the future, similar assessment material will be assigned since a fundamental understanding of Darcy's Law is a key student learning outcome for this course.

