

## Teaching and Learning Project Assessment Report

Program or Unit: \_\_\_\_\_ Chemistry \_\_\_\_\_  
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We are closing the assessment loop by following up on the Improvement Plan submitted in August 2011.

Previously, Mitch Scheickert and Dennis Gravert collected and pooled the assessment data for their sections of Chem 7.

This was regarding CSLO #2: Recognize the organic classes commonly found in biological molecules and predict their reactivity. The student will understand the structure & function of biological systems from chemical & physical perspectives.

Here is the data obtained by using the third exam as the assessment tool:

- # High Proficiency = 8 (15%)
- # Meets Proficiency = 20 (39%)
- # Below Proficiency = 24 (46%)

Together Mitch and I reached the following conclusions:

Organic reactions are one of the most difficult (but inescapable) topics in the course. These results are not unusual for Chem 7 classes, but of course we would prefer them to improve. The data was obtained from two sections of Chem 7. The distribution of proficiencies was similar between both sections.

Both professors routinely use a weekly extra "lab hour" to review lecture topics with students. Using worksheets or textbook problems, we drill the class in what we know will be their most difficult topics. We will give extra time to this topic in the Fall courses.

This fall I began nearly every 3-hour lab session with a review session lasting 45 to 90 minutes. During this time, students discussed topics and worked out exercises in preparation of upcoming exams. I tried to place special emphasis on organic reactions.

For my section of Chem 7, I obtained the following assessment results using the third exam:

- # High Proficiency = 2 (6%)
- # Meets Proficiency = 17 (50%)
- # Below Proficiency = 15 (44%)

Apparently the extra time for review did not improve student learning significantly, or at least, test scores did not increase. Many students told me that they found value in the review sessions, so I will continue to use the beginning of each lab for review. However, I need a different strategy to help more students understand organic reactions.

I am going to write new worksheets designed to help students break down and analyze organic reactions. Perhaps a step-by-step procedure (identify the change in functional groups, recall pertinent reactions, and modify to solve the given problem) will give students a better understanding.