

Chemistry 108: Fundamentals of Chemistry Lab Learning Outcomes Assessment Project Executive Summary

Stage 1: Designing and Proposing a Learning Outcomes Project

The initial assessment of Chemistry (CHEM) 108 in 2000 resulted in the recommendation that a new laboratory textbook be adopted. Subsequent assessments were conducted during fall 2001 and spring 2004 semesters. The assessment instrument consisted of an exit performance exam designed in-house by CHEM 108 professors. External affirmation of the assessment content and criteria was obtained in consultation with Chemistry for Allied Health Professions Laboratory faculty at Towson University. Only CHEM 108 classes on the Essex campus were involved in this LOA project.

Stage 2: Implementing the Design and Collecting and Analyzing the Data

In the fall 2001 semester, CHEM 108 faculty participated in administering the lab performance exam. The assessment revealed scores that were lower than those obtained during fall 2000 assessment for a significant number of students. In fact only 68.7 % of these students had mean scores that were in the successful performance range (defined by mean scores of 3.0 or greater for the 14 skills/knowledge areas assessed). Clearly these results reflected a change in the wrong direction.

Stage 3: Redesigning the Course to Improve Student Learning

It was the consensus of the faculty teaching CHEM 108 that the new manual actually provided too much information for the student and that most of the students were not taking the time to read the introductory and explanatory material. Hence it was decided to write a new lab manual designed to provide the necessary student support yet still be able to do so in a manageable length for each laboratory exercise. Support for this project was provided by a CCBC Summer Grant and the new manual was written in the summer of 2002.

Stage 4: Implementing Course Revisions and Reassessing Student Learning

By fall 2003, the chemistry faculty felt that the new lab manual was fully implemented in the CHEM 108 lab. They also felt that the culture of evidence resulting from assessment procedures had increased communication among the faculty and increased awareness of teaching skills. Reassessment occurred in spring 2004.

Stage 5: Final Analysis and Reporting Results

These results show that 95.3 % of the CHEM 108 students achieved successful performance as defined by mean scores of 3.0 or greater for the 14 skills/knowledge areas assessed – a dramatic improvement over the results for the fall 2001 assessment.

The CHEM 108 faculty plan to use the information from this LOA project to further improve student learning by sharing their results with the other campuses, encouraging the use of a lab manual that provides student support in a meaningful, yet concise manner, and continuing to raise awareness of the connections between teaching strategies and student learning.