

Chemistry 122: General Chemistry 1 Lab Learning Outcomes Assessment Project Executive Summary

Stage 1: Designing and Proposing a Learning Outcomes Project

The assessment of students enrolled in Chemistry (CHEM) 122 was conducted by chemistry faculty during the spring 2003 and spring 2004 semesters. The assessment instrument consisted of an exit performance exam designed in-house by CHEM 122 professors. External affirmation of the assessment content and criteria was obtained in consultation with General Chemistry I Laboratory faculty at Towson University.

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

In the spring 2003, CHEM 122 faculty on the Essex campus administered the assessment using a 5-point criteria scale with a score of 3 points considered satisfactory. It was determined that 78% of students scored an overall satisfactory or better (average overall score = 3.35).

Stage 3: Redesigning the Course to Improve Student Learning

Analysis of the 2003 data led to the identification of specific areas of weakness in the lab course. To address these areas, additional laboratory exercises were developed and incorporated into the lab program on the Essex campus.

Stage 4: Implementing Course Revisions and Reassessing Student Learning

By spring 2004, the new lab exercises were fully implemented in the curriculum on the Essex campus and reassessment occurred there as well as an initial assessment of the same course on the Catonsville campus. The Catonsville CHEM 122 faculty had not yet incorporated the new lab activities nor been involved in the assessment process until this point.

Stage 5: Final Analysis and Reporting Results

The data from the second assessment suggest the new experiments may have contributed significantly in raising the overall success rate from 78% to 100% for students on the Essex campus. The success rate of the Catonsville students was 72%, closely matching the results on the Essex campus before the new lab exercises were added. The CHEM 122 faculty plan to use the information from this LOA project to further improve student learning by continuing to review the lab manuals for user friendly and relevant language, recommending significant teacher – student interaction during labs, and encouraging more performance assessments.

