COURSE SLO ASSESSMENT REPORT, SCC

Department: ____Earth, Space, and Physical Science_____ Course: ___Chem 229_____

Year: ___2011_____ Semester:____Fall_____

1) Outcome to be assessed	1 - Identify the essential parts of a problem and apply known chemical concepts in solving the problem.
2) Means of assessment and criteria of success	To assess SLO#1, we have administered the standardized exam for the year long course of general chemistry provided by the American Chemical Society. Criteria of success as stated by the American Chemical society has not yet been determined for this specific exam (2011). Historically a passing score is 36/70; and will therefore be considered meeting the standard.
3) Summary of data collected	At the end off the fall semester, the ACS standardized exam was administered for 2 sections of chemistry 229. The total number of students who took the exam was 36. The class averages were 47.7 (17 students) and 47.6 (19 students) of correct answers. Only 3 students in the course scored below the nation average of 36 and their scores were 35, 34, and 32. **Based on this criteria, 92% of the students completing Chem 229 successfully completed SLO#1.** Break down of overall scores is as follows: Score # students 60-70 2 50-59 13 40-49 16 30-39 4 0-29 0 We ran the analysis of the answers of the individual exam questions; the data and analysis can be seen below.

4) Analysis of data	From data analysis and looking at topics covered on the questions missed by the majority (over 50%) of the students taking the standardized ACS exam, only 6 of 16 questions were from Chem 229, the others were topics covered in first semester general chemistry (Chem 219). Of the questions from topics covered in Chem 229, students appear to have deficiencies in electrochemistry (including oxidation-reduction reactions).
5) Plan of action/what to do next	Our class average in both sections is above the expected national average on the ACS exam and 92% of students passed SLO #1. This shows that we have a strong curriculum in the year sequence of general Chemistry (Chem 219 & 229). As a way to overcome some of the deficiencies in specific topics, we will have review sessions and write directed learning activities for students to complete on the topic of electrochemistry. We will start working on the development of a lab to cover these topics "hands on".

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*1) Outcome to be assessed	2 - Write in scientific terms and explain observed scientific phenomenon using the language of chemistry. 3 - Act with experimental competency, collect and analyze data, identify sources of error and interpret laboratory result.
2) Means of assessment and criteria of success	To assess SLOs #2 & 3 we assigned a lab final project consisting of the identification of 2 unknown inorganic samples, each containing 1 or 2 cations and 1 or 2 anions. The project is based on the experiments performed throughout the semester and uses the lab notes/observations they've taken. A score of 70% or better is considered meeting the standard.
3) Summary of data collected	The last 5 weeks of the semester was spent performing the final project in lab. The project was completed by 2 sections of Chem 229, a total of 36 students. The average score on the project was 87% with only 5 out of the 36 students completing the project not passing the assessment with a grade of 70% or better. **Based on this criteria, 86% of the students completing Chem 229 were successful in completing SLOs 2 & 3.** Break down of overall scores is as follows: Score # students 90-100 24 80-89 5 70-79 2 60-69 3 0-59 2

4) Analysis of data	After looking at the break down of individual student scores it is clear to see that the vast majority of students did well, correctly identifying their unknown inorganic mixtures with little or no help. All of the students that did not pass the assessment were unable to correctly identify all components of their unknown mixtures even when given assistance.
5) Plan of action/what to do next	Our students are doing well in lab and are able to write a procedure that they can follow at a later date and use to identify unknown mixtures of inorganic compounds while following safe lab practices. We will continue to instruct lab in this manner.