Fall 2013 SLO/PLO ASSESSMENT REPORT – Physical Sciences

Date: January 21, 2014

Name of Person Reporting: Said Pazirandeh

Name of Department and/or Discipline: Physical Sciences

1. What courses/certificates/programs have you assessed this past semester?

   Astronomy 1
   Chemistry 101
   Chemistry 102
   Physics 6
   Physics 37

2. Summarize the analysis of your assessment results for courses in your area including what benchmarks (standards for student success) were established for achievement of the SLO(s).

   Astronomy 1
   One SLO for this course was assessed on explaining the methods astronomers use to explore the natural phenomena of the universe, including observation, hypothesis development, and evaluation of evidence. A short answer essay question was used on the final exam, and was assessed using a rubric developed by the course instructor. The benchmark of success was defined as 70% of students having a score of 2 (satisfactory) or greater.

   Chemistry 101
   One SLO for this course was assessed on performing laboratory techniques safely and accurately and maintaining a laboratory notebook according to standard scientific guidelines. The assessment tool used was the result of two laboratory experiments performed by students in the course. Student results were evaluated using a rubric developed by the course instructor with input from the Department Chair. The benchmark of success was defined as 70% of students having a score of 3 (satisfactory) or greater.

   Chemistry 102
   One SLO for this course was assessed on solving quantitative chemistry problems through integration of multiple ideas and demonstrating reasoning clearly and completely. A question relating to this SLO was included in the final exam, and the results were evaluated
using a rubric developed by the course instructor. The benchmark of success was defined as 70% of students having a score of 3 (satisfactory) or greater.

Physics 6
One SLO for this course was assessed on acquiring, analyzing and graphing scientific data collected with instruments during laboratory experiments, as demonstrated in a lab report. Laboratory reports for one experiment in the course were used to assess this SLO, using a rubric developed by the course instructor. The benchmark of success was defined as 70% of students having a score of 2 (satisfactory) or greater.

Physics 37
One SLO for this course was assessed on solving problems dealing with matter, motion, and energy, as demonstrated on quizzes, tests, and lab reports. A question relating to this SLO was included in the final exam, and the results were evaluated using a rubric developed by the course instructor. The benchmark of success was defined as 70% of students having a score of 2 (satisfactory) or greater.

3. Based on the discussion and analysis of your assessment results, what changes have you made or do you plan to make?

Evaluation of the SLO in Chemistry 101 indicates a need to discuss in more detail the possible sources of error that could affect student results. Instructor will provide more detailed instruction as well as sample rubric for assessment, so students are more aware of possible outcomes for their results.

Evaluation of SLO in Chemistry 102 indicates a need for greater emphasis on developing skills to apply knowledge in class to solving more complex problems. Additional problem solving examples will be used in lecture to achieve these results.

4. Follow up on previous assessments:
(1) If this SLO was assessed previously, compare the results with the earlier assessments. Have the recommended changes been implemented?

All SLOs assessed during Fall 2013 were in phase 1 of assessment.

(2) How have the findings led to improved student learning and the achievement of the college mission?

Students completing the courses assessed above are expected to master basic concepts on the scientific principles included in the SLOs. This knowledge is important for the next course in the sequence and will lead to improved student learning and achievement in the completion of these courses.
5. How have the results of your assessments been shared and discussed among the members of your program? (Provide dates and any minutes of meetings as evidence.)

Faculty in the department met informally throughout the semester and at the end of the semester to develop rubric criteria and assess the SLO outcomes. I personally met with Gayane Godjoian and Richard Rains during the week of January 13 to discuss the results of their assessments for the SLOs and discussed any changes to curriculum and additional resources based on these assessments.

6. How have the results of your assessments been shared and discussed with members of your advisory committee (if vocational program)?

Not applicable

7. What resource requests are planned as a result of the assessments?

The chemistry SLO assessment results did not warrant any resource requests. However, the assessments for the Physics courses the past two semesters indicated a lack of proper functioning equipment used in the laboratory portion of the courses. Resources requests were prepared and submitted to the STEM director to supplement this equipment. Once received, this new equipment will be used in future assessment of SLOs in the Physics courses.

8. Have the assessment results been posted on the online system?

Physics and astronomy assessments have already been posted to the online SLO system. The chemistry assessments are planned to be posted online before the beginning of the Spring 2014 semester.