College of Science (CSCI)
North Science 135
25800 Carlos Bee Boulevard, Hayward CA 94542

2014-2015 CSCI EETF Assessment Year End Report, June, 2015

[NOTE: Items A, B, C, and D are identical to your Page 2 on your Annual Report for CAPR. Please simply cut and paste from there. Item E is unique to the C

D. Summary of Assessment Results

CHEM 6430 Protein Chemistry Techniques

Graduate Program SLO-1: Demonstrate specialized knowledge in the chemical sciences beyond the undergraduate level

Selected Specific Learning Goals:
1) Be able to predict protein behavior on ion exchange columns (Exam I, Q 7)
2) Explain the theoretical basis for the improved separation efficiencies obtained with high performance liquid chromatography (HPLC) (Exam I, Q 11)
3) Describe the principles underlying non-denaturing and denaturing protein gel electrophoresis (Exam II, Q 6)
4) Describe the theoretical basis for isoelectric focusing (Exam II, Q 9)
5) Explain the principles of mass spectrometry as applied to the analysis of peptides derived from proteins identified in proteomics experiments (Exam II, Q12)

Assessment Results for SLO-1: Six students

Embedded Exam Question*	No. Students with Correct Answer	% Students Meeting Expectations
Question 6	4	67
Question 7	4	67
Question 9	5	83
Question 11	4	67
Question 12	5	83

*Partial credit was given for embedded exam questions. If 75% of the possible points were earned the answer was counted as correct.

Analysis: The student performance was very good for learning goals 4 and 5 and reasonably good for the other goals. However, since our desired standard is at least 75% of the students achieving each goal, there is definitely room for improvement for learning goals 1,2 and 3.

Assessment Tool: Analysis of student laboratory notebooks using the criteria given below for three specific learning goals.

Laboratory Notebook Assessment Criteria:

Exemplary (90-100 points)	Basic (75-89 points)	Insufficient (0-74 points)
All observations are clearly presented. Experimental data is internally consistent. All calculations are correct and tables and graphs are included with proper units. Results are analyzed critically, sources of error considered and conclusions written in a coherent manner.	Most observations are clearly presented and	

Final Q8	4	8	4	50
Final Q12 (a) to (i)	6	8	6	75
Lab #7 (AA) question	7	8	3	38

*Where partial credit was given, the answer was counted as correct if at least 75% of the total possible points were awarded.

Summary

Student Learning Outcome	Average Percentage of Students Able to Answer the Questions
1	63%
2	75%
3	0 %
4	63%
5	38%
6	75%
7	38%

Conclusion: In this quarter, none of our master's degree students reached their learning outcome #3, which suggests their lacking in understanding the basic working principle behind Laser. In addition, more than half of our students did not accomplish their learning outcomes #5 and #7 as well, which indicates that they did not acquire adequate knowledge and understanding regarding analysis of NMR spectra as well as calculation of the average sensitivity and the detection limit of an optical instrument. Thought all of eight master's degree students passed this course with passing grades (at least B-), their lack of understanding in specific topics is concerning.

Seminar CHEM 6820

the ability to answer questions about the topic using a common rubric. Assessment was measured by the number of students presenting a seminar that met or exceeded the expectations by their third seminar presentation.

During the 2014-2015 academic year, 12 students gave their first seminar. The average score for these students was 11.3/16 or 70.6%. The average score for the 12 students giving their second seminar was 12.8/16 or 80.0%. The average score for the 13 students giving their third seminar was 13.25/16 or 82.5%.

Academic Year	1st Seminar	2nd Seminar	3rd Seminar

E. Suggestions and Recommendations for the CSCI EETF in the Future