

Chemistry SLOAC

This serves as an example of assessment work shaping/driving resource requests/allocation



Dept - (PSME) Chemistry

CHEM 25:Preparation Course for General Chemistry

<i>Student Learning Outcomes (SLOs)</i>	<i>Assessment Methods</i>	<i>Assessment Data Summaries</i>	<i>Enhancements</i>
CHEM50_SLO_1 - Assess the fundamental concepts of modern atomic and molecular theory. SLO Status: Active	Exam - Course Test/Quiz - 3. How many neutrons are in the nucleus of an atom of 6027 Co? 34. What is the molecular shape of NH ₃ ? Target for Success: 70% (which is higher than the national average success rate reported by the American Chemical Society).	Program Review Reporting Year: 2012-2013 Target : Target Not Met #3) Number of Responses: 37 Number of Correct: 19 Number of Incorrect:18 Average % Correct: 51.4% #34) Number of Responses: 37 Number of Correct: 25 Number of Incorrect:12 Average % Correct: 67.6% (06/24/2010) Reflection (CLICK ON ? FOR INSTRUCTIONS): A detailed reflection is provided at the end of the final outcome.	Enhancement: A detailed action plan is provided at the end of final outcome. (04/02/2013)
CHEM50_SLO_2 - Evaluate the standard classes of chemical reactions. SLO Status: Active	Exam - Course Test/Quiz - 15. What are the predicted products from the following neutralization reaction? 16. What is the formula of the predicted product from heating magnesium metal and nitrogen gas? Target for Success: 70% (which is higher than the national average success rate reported by the American Chemical Society).	Program Review Reporting Year: 2012-2013 Target : Target Not Met 15) Number of Responses: 37 Number of Correct: 21 Number of Incorrect:16 Average % Correct: 56.8% 16) Number of Responses: 37 Number of Correct: 34 Number of Incorrect: 3 Average % Correct: 91.9 %	Enhancement: A detailed action plan is provided at the end of final outcome. (04/02/2013)

Student Learning Outcomes (SLOs)	Assessment Methods	Assessment Data Summaries	Enhancements
		<p>(06/25/2010)</p> <p>Reflection (CLICK ON ? FOR INSTRUCTIONS): A detailed reflection is provided at the end of the final outcome.</p>	
<p>CHEM50_SLO_3 - Demonstrate a fundamental understanding of mathematical concepts pertaining to chemical experimentation and calculations.</p> <p>SLO Status: Active</p>	<p>Exam - Course Test/Quiz - 28. How many moles of helium occupy a volume of 5.00L at 227.0°C and 5.00 atm?</p> <p>48. If 37.5 mL of 0.100 M calcium chloride reacts completely with aqueous silver nitrate, what is the mass of AgCl (143.32g/mol) precipitate?</p> <p>Target for Success: 70% (which is higher than the national average success rate reported by the American Chemical Society).</p>	<p>Program Review Reporting Year: 2012-2013</p> <p>Target : Target Not Met</p> <p>28. Number of Responses: 37 Number of Correct: 16 Number of Incorrect: 21 Average % Correct: 43.2 %</p> <p>48. Number of Responses: 37 Number of Correct: 28 Number of Incorrect: 9 Average % Correct: 75.7%</p> <p>(06/25/2010)</p> <p>Reflection (CLICK ON ? FOR INSTRUCTIONS): The national success rate in chemistry (based on data from nsf.gov and acs.org) is between 65-70%. The assessment data of the outcomes for this chemistry class indicates that the performance of De Anza College chemistry students is at or above the national average. While this is encouraging, we feel that there is scope for further improvement. Since this is a "preparation" class for General Chemistry course sequence, our experience has been that, those students who simply meet the minimum required performance standards in this class are having difficulties in the General Chemistry sequence. The primary methods by which we can elevate student performance to far above average standards would be: 1) by providing students greater support via tutorials/recitations and education about study skills; and 2) by providing students a better laboratory experience by tying in the lab experiences more closely with the lecture.</p>	<p>Enhancement: The proposals in the reflection statement will require considerable additional resources, which we currently lack. While the tutorial center provides students with an opportunity for drop-in tutoring; the number of tutors available is a small number compared to the total number of students enrolled in this class. Additionally, the tutorial center is not equipped to provide students with guidance regarding study skills, or strategies for being successful in chemistry (and sciences in general).</p> <p>Based on our assessment of a different chemistry class (Chem 1B) in which the lecture and laboratory are extremely well coordinated, we concluded that laboratory experiences that closely parallel material discussed in the lecture is essential for students to be successful in chemistry. The limiting factor in having a highly challenging and exceptional laboratory program is primarily due to limitations in resources. Specifically, the staffing situation in our laboratories is sub-par; we have one staff member undertaking the responsibilities of three entirely different positions (stockroom manager, hazardous</p>

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			<p>waste manager, laboratory coordinator). Changes to our laboratory curriculum involve a great deal of planning: developing new laboratory experiments, ordering required chemicals and other supplies, writing a new laboratory manual, creating waste labels, organizing different necessary equipment, training student workers in appropriate laboratory preparations, just to name a few. All of these tasks require large investments of time from both the faculty and the single stockroom full-time personnel. While the faculty may be able to develop new and interesting laboratory experiments, it is impossible to implement these without complete synergy with the (lone) stockroom personnel.</p> <p>Students will greatly benefit from a richer laboratory experience, and this is likely to lead to a much improved accomplishment and success of the learning outcomes. However, due to limitations in resources such projects are currently purely theoretical concepts.</p> <p>(04/02/2013)</p>