

COURSE SLO ASSESSMENT REPORT, SCCDepartment: Science Course: Chem 219Year: 2011 Semester: Fall

*1) Outcome to be assessed	SLO A: "Identify the essential parts of a problem and apply known chemical concepts in solving the problem"
2) Means of assessment and criteria of success	As a method of assessment, we used a common final exam as 50 multiple choice questions to give to all three sections assessed. The exam had some concept questions and some calculation based problems.
3) Summary of data collected	Number of students assessed: 59 Number of sections: 3 Average correct answers for each section: 34.9(69.8%), 31.7(63.4%), 23.8(47.6%) Average answers for all sections combined: 30.6(61.2%)
4) Analysis of data	From the data, some of these questions had a lower correct(less than 50%) answers. This includes: Question #7(Conversions) Question #12(Dissociation/concentration) Question #16(Solubility rules) Question #23(Gas stoichiometry) Question #24(Gas stoichiometry) Question #30(Atomic structure/quantum numbers) Question #31(Atomic structure/e- configuration) Question #33(Periodic trends) Question #35(Bonding) Question #36(Hess's Law/bond energies) Question #47 (Kinetics/2nd order) Question #49(Equilibrium/LeChatelier) Question #50(Equilibrium)

5) Plan of action/what to do next	<p>The scores show the lowest percentage of success at the end of the assessment. This may be a result or a combination of the following two factors: test fatigue at the end of the exam and time allocated for lessons concerning thermodynamics, and kinetics, equilibrium.</p> <p>Other poor scoring questions (like question #8 & #33) seem to be connected towards the wording of the question. These questions need to be revised to make the assessment to be more “readable”</p>
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Department: Science Course: Chem 219

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*1) Outcome to be assessed	SLO B: "Write in scientific terms and explain observed scientific phenomenon using the language of Chemistry" SLO C: "Perform experiments with the given directions, collect valid scientific data, analyze the data and interpret laboratory results"
2) Means of assessment and criteria of success	As a method of assessment, we used laboratory reports as a way to assess both B and C in SLOs. A full laboratory report of experiment #9 (Volumetric analysis) will be used to assess these SLOs. A rubric will be used to standardize grading of the lab report and help identify the features we are looking for in students' performance. The students are asked to perform the volumetric analysis experiment over 3 laboratory periods. Directions to perform the experiment are given in the laboratory manual but there is no directions to how to collect data, what to record and no directions are given to how to perform calculations and draw conclusions. The students will be evaluated on their ability to follow procedure, collect their data and perform the necessary calculations.

3) Summary of data collected	<p>Number of students assessed: 59 Number of sections: 3</p> <table border="1" data-bbox="443 183 1518 860"> <thead> <tr> <th></th> <th>Beginning 1</th> <th>Developing 2</th> <th>Accomplished 3</th> <th>Exemplary 4</th> </tr> </thead> <tbody> <tr> <td>Purpose</td> <td>10(16.9%)</td> <td>15(25.4%)</td> <td>13(22.0%)</td> <td>21(35.6%)</td> </tr> <tr> <td>Procedure</td> <td>1(1.7%)</td> <td>3(5.5%)</td> <td>8(13.6%)</td> <td>47(79.7%)</td> </tr> <tr> <td>Data and Results</td> <td>2(3.3%)</td> <td>4(6.8%)</td> <td>7(11.9%)</td> <td>46(76.3%)</td> </tr> <tr> <td>Calculations</td> <td>2(3.3%)</td> <td>3(5.5%)</td> <td>4(6.8%)</td> <td>50(84.7%)</td> </tr> <tr> <td>Accuracy (% acetic acid)</td> <td>5(8.5%)</td> <td>3(5.5%)</td> <td>3(5.5%)</td> <td>46(76.3%)</td> </tr> <tr> <td>Accuracy (Equiv. mass)</td> <td>14(23.7%)</td> <td>5(8.5%)</td> <td>13(22.0%)</td> <td>26(44.1%)</td> </tr> <tr> <td>Conclusion</td> <td>13(22.0%)</td> <td>4(6.8%)</td> <td>15(25.4%)</td> <td>27(45.8%)</td> </tr> </tbody> </table>		Beginning 1	Developing 2	Accomplished 3	Exemplary 4	Purpose	10(16.9%)	15(25.4%)	13(22.0%)	21(35.6%)	Procedure	1(1.7%)	3(5.5%)	8(13.6%)	47(79.7%)	Data and Results	2(3.3%)	4(6.8%)	7(11.9%)	46(76.3%)	Calculations	2(3.3%)	3(5.5%)	4(6.8%)	50(84.7%)	Accuracy (% acetic acid)	5(8.5%)	3(5.5%)	3(5.5%)	46(76.3%)	Accuracy (Equiv. mass)	14(23.7%)	5(8.5%)	13(22.0%)	26(44.1%)	Conclusion	13(22.0%)	4(6.8%)	15(25.4%)	27(45.8%)
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4) Analysis of data	<p>The lowest scoring portion of the assessment is the purpose and conclusion. A very curious result shows that the students did well with the “% acetic acid” in an unknown, but did not fare as well in the “equivalent mass” even though the same techniques were used. Students were quite strong in presenting data and calculations in a clear and logical manner.</p>																																								

5) Plan of action/what to do next	Understanding the purpose of the experiment will help improve the conclusion. More direction before the execution of the experiment is needed by the instructor so that the students understand the purpose of the experiment. The students need to understand how the conclusion is tied to the purpose. An analysis should be made for next year to see if one of the unknowns used to determine the “equivalent mass” does not consistently yield a favorable result.
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