COURSE SLO ASSESSMENT REPORT, SCC

Department: _Earth, Space and Physical Sciences (Chemistry)_____ Course: _____Chem 209_____
Year: _2011_____ Semester:____Fall_____

<table>
<tr><td>1) Outcome to be assessed</td><td>A- Describe chemical events through utilization of equations and solve problems using chemical concepts</td></tr>
<tr><td>2) Means of assessment and criteria of success</td><td>The assessment of this SLO will be done by administering a common final exam. The final exam will test their chemical knowledge in the areas indicated including chemical formulas, chemical equations, stoichiometry, concepts, and history of chemical advances. All sections of the class will be administered this assessment. Collection of the data will follow. A discussion of the results of the assessment will follow with faculty. Criteria of success will be getting 60% on the common final exam.</td></tr>
<tr><td>3) Summary of data collected</td><td>No students = 61 students
No sections = 3 sections
Total no of questions = 50
The average scores were 31.4, 35.9, and 37.1
<table>
<tr><th>Question</th><th>Incorrect</th><th>Question</th><th>Incorrect</th><th>Question</th><th>Incorrect</th><th>Question</th><th>Incorrect</th><th>Question</th><th>Incorrect</th></tr>
<tr><td>1</td><td>23 (38%)</td><td>11</td><td>24 (39%)</td><td>21</td><td>26 (43%)</td><td>31</td><td>30 (50%)</td><td>41</td><td>8 (13%)</td></tr>
<tr><td>2</td><td>24 (39%)</td><td>12</td><td>11 (18%)</td><td>22</td><td>12 (20%)</td><td>32</td><td>20 (33%)</td><td>42</td><td>6 (10%)</td></tr>
<tr><td>3</td><td>17 (28%)</td><td>13</td><td>5 (8%)</td><td>23</td><td>2 (3%)</td><td>33</td><td>12 (20%)</td><td>43</td><td>16 (26%)</td></tr>
<tr><td>4</td><td>34 (56%)</td><td>14</td><td>13 (21%)</td><td>24</td><td>12 (20%)</td><td>34</td><td>11 (18%)</td><td>44</td><td>14 (23%)</td></tr>
<tr><td>5</td><td>9 (15%)</td><td>15</td><td>27 (44%)</td><td>25</td><td>45 (74%)</td><td>35</td><td>6 (10%)</td><td>45</td><td>41 (67%)</td></tr>
<tr><td>6</td><td>26 (43%)</td><td>16</td><td>15 (25%)</td><td>26</td><td>16 (26%)</td><td>36</td><td>25 (41%)</td><td>46</td><td>37 (61%)</td></tr>
<tr><td>7</td><td>10 (16%)</td><td>17</td><td>8 (13%)</td><td>27</td><td>6 (10%)</td><td>37</td><td>26 (43%)</td><td>47</td><td>40 (66%)</td></tr>
<tr><td>8</td><td>6 (10%)</td><td>18</td><td>13 (21%)</td><td>28</td><td>5 (8%)</td><td>38</td><td>17 (28%)</td><td>48</td><td>24 (39%)</td></tr>
<tr><td>9</td><td>28 (46%)</td><td>19</td><td>27 (44%)</td><td>29</td><td>22 (36%)</td><td>39</td><td>27 (44%)</td><td>49</td><td>13 (21%)</td></tr>
<tr><td>10</td><td>31 (51%)</td><td>20</td><td>13 (21%)</td><td>30</td><td>15 (25%)</td><td>40</td><td>11 (18%)</td><td>50</td><td>28 (46%)</td></tr>
</table></td></tr>
</table>

4) Analysis of data	Out of 61 students, 16 (26%) students did not get 60% on the final exam. Using this success criteria, 74% of our students achieved the SLO and were successful in completing the course SLO with competency level. In questions number 4 (covalent bond), question number 25 (number of atoms in moles of a formula), question 31 (emission spectrum), question 45 (stoichiometry in solutions), question 46 (stoichiometry in solutions with limiting reagent), question 47 (isotopes), more than 50% of the students answered the question incorrectly. It is also clear that students had difficulty with ion sizes, polar covalent bonds, gas laws, specific heat capacity calculations, mass of an atom, empirical formula, and predicting reaction products.
5) Plan of action/what to do next	The solution chapter was a weak point because it was introduced last and by default, it will be the one with less practice.

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Year: _2011_____ Semester:____Fall_____

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<tr><td>1) Outcome to be assessed</td><td>B- Perform experiments with given directions and collect valid scientific data</td></tr>
<tr><td>2) Means of assessment and criteria of success</td><td>This SLO was assessed using a laboratory report. The experiment used was stoichiometry where the students had to make measurements, perform a reaction then calculate percent yield of that reaction. A rubric was used to grade the report from all laboratory sections. The rubric graded them on their chemical equation, data collected, calculations and post laboratory questions. For success, students needed to get 60% or higher on the report.</td></tr>
<tr><td>3) Summary of data collected</td><td>No students = 57 students
No sections = 3 sections
<table>
<tr><th></th><th>Accomplished
2</th><th>Developing
1</th><th>Beginning
0</th></tr>
<tr><td>Chemical equation</td><td>26 (46%)</td><td></td><td>31(54%)</td></tr>
<tr><td>Data</td><td>46 (81%)</td><td>11 (19%)</td><td>0</td></tr>
<tr><td>Mass of $NaHCO_3$ calculated</td><td>55 (96.5%)</td><td>2 (3.5%)</td><td>0</td></tr>
<tr><td>Theoretical yield of NaCl calculated</td><td>53 (93%)</td><td>2 (3.5%)</td><td>2 (3.5%)</td></tr>
<tr><td>Actual yield of NaCl calculated</td><td>52 (91%)</td><td>5 (9%)</td><td>0</td></tr>
<tr><td>%yield calculation</td><td>47 (82%)</td><td>7 (12%)</td><td>3 (5%)</td></tr>
<tr><td>Post lab question # 3</td><td>38 (67%)</td><td>13 (23%)</td><td>6 (10%)</td></tr>
<tr><td>Post lab question # 4</td><td>42 (74%)</td><td>13 (23%)</td><td>2 (3%)</td></tr>
<tr><td>Post lab question # 5</td><td>44 (77%)</td><td>3 (5%)</td><td>10 (18%)</td></tr>
</table></td></tr>
</table>

4) Analysis of data	From the data presented, in all parts of the report, students were able to achieve over 60% except in the area of writing an equation. The other area of challenge for the students was answering post lab questions that deals with effect of excess hydrochloric acid, the effect of incomplete reaction and the percent calculation problem.
5) Plan of action/what to do next	Instructor's need to stress the fact that a complete balanced equation has to be written for every stoichiometry reaction.