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| **Science CHM151**  **2022-2023 Assessment Report** |
| **Assessment Reporting Form:** This report is to show that academic assessment is occurring and that the results are being used to make changes to improve student learning. The assessment being reported could be for Program Learning Outcomes (PLOs), Measurable Student Level Outcome (MSLOs), and/or Course Common Student Learning Outcomes (CSLOs). Each program should be assessing and gathering data for at least **two** PLOs OR **two** MSLOs that contain CSLOs each year.  On the Baseline Assessment Reporting Form, please record the baseline for the percentage of students who are proficient in the student learning outcome(s) assessed and identify improvements that will be made to increase that percentage. Later, you’ll complete a follow-up assessment (recorded on a Follow-Up Assessment Reporting Form) to ascertain whether the adopted improvements resulted in an increased percentage of students proficient in the assessed learning outcome(s). |
| **Course or Program Assessment Details Due Oct. 13, 2022** |
| **1. Program name or course name and number**: General Chemistry CHM-151 |
| **2. Division in which the program or course is located**: Physical sciences |
| **3. Date form completed**: 10/13/22 |
| **4. Name of person completing report**: **Bhumasamudram Jagadish** |
| **5. Semester and year in which the assessment was conducted**: Fall 2022 |
| **6. Number of student participants**: 33 |
| **7. Number of faculty/staff participants**: 3 |
| **8. What PLOs and/or MSLOs and CSLOs did you assess for this baseline assessment? (For clarity, please label each measure listed as a PLO, MSLO, or CSLO.)**  There will be 16 questions each corresponding to one of the 16 MSLO for CHM-151. All the  questions covered 2 and 4 of the CSLO. The MSLO for CHM-151 is sent as an attachment  with this document |
| **9. Describe the assessment method used and the criteria for successful achievement of student learning outcomes. (e.g., rubrics, licensing exam, internship, portfolio, exam, quiz, research paper, performance exam, EAC, etc.)**  The assessment was given as a quiz in Blackboard ultra. Each of the 16 questions are from a question pool. |
| **Course or Program Assessment Results & Evaluation Due December 10, 2022** |
| **10. What percentage of the participating students were proficient in the PLOs, MSLOs or CSLOs?  What percentage of correct answers was determined as proficient? (For example, a student must answer 70% of the questions correctly to be considered proficient.)**  25 of the 33 participated (76%) students had answered 70% of the questions correctly. |
| **11. What changes/improvements were made or will be made in response to the outcomes of the assessment process?**  More emphasis will be given to teach the concepts the students did either poorly or below average. |
| ***Feel free to attach your PLOs OR MSLOs and CSLOs and indicate which were assessed***  All of the below MSLO’s were assessed.  CHM-151-MSLOs    1. (Application Level) Using units, labels and the concept of significant figures, accurately perform simple chemical calculations. (CSLO 2)  2. (Application Level) Accurately predict formulas and the behavior of atoms and isotopes by using the periodic table and atomic composition. (CSLO 2)  3. (Application Level) Using standard chemistry nomenclature, accurately name ionic and covalent compounds and predict their formulas. (CSLO 2)  4. (Application Level) Using the mole as the basis of stoichiometry, accurately relate mass to number of molecules. (CSLO 2)  5. (Application Level) Using the principles of stoichiometry, accurately complete and balance chemical equations. (CSLO 2)  6. (Analysis Level) Use solubility data accurately to analyze and predict species precipitating or remaining in a net ionic equation. (CSLO 2)  7. (Application Level) Using standard classification methods, accurately identify reaction types, including oxidation-reduction reactions. (CSLO 2)  8. (Application Level) Using molarity, accurately calculate concentrations, titrations and dilution amounts. (CSLO 2,4)  9. (Analysis Level) Using concepts of specific heat capacity, enthalpy and calorimetry, accurately analyze and calculate energy changes in physical and chemical reactions. (CSLO 2,4)  10. (Application Level) Relate colors of light to energies of electronic transitions in atoms accurately using standard equations. (CSLO 2)  11. (Analysis Level) Using periodic trends and effective nuclear charge, accurately explain and predict atomic properties. (CSLO 2)  12. (Application Level) Using the main-group valence electron theory and the octet rule, accurately draw Lewis structures. (CSLO 2)  13. (Analysis Level) Use Lewis structures accurately to predict electronic and molecular geometries of molecules, their polarity, and their valence-bond hybridization. (CSLO 2)  14. (Application Level) Using IUPAC rules and common names, identify and name simple organic molecules accurately. (CSLO 2)  15. (Application Level) Use gas laws accurately to predict and calculate behaviors of gases. (CSLO 2,4)  16. (Analysis Level) Using molecular geometry, accurately predict relative intermolecular forces and boiling points. (CSLO 2)  17. (Analysis Levels) Demonstrate the techniques for using scientific lab equipment properly and safely to perform a variety of chemical procedures and techniques, such as to obtain chemical data, measure and dispense reagents. Actively and successfully complete safely the assigned series of laboratory experiments (in a supervised instructional laboratory) or field trips in which observation and critical reasoning skills are employed in the development of detailed report writing, within the allotted time. (CSLO 2, 4)  18. (Synthesis Level) Actively and successfully develop and write detailed reports on the assigned series of laboratory experiments or field trips while demonstrating observation and critical reasoning skills. (CSLO 2, 4) |

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| **Feedback Rubric** | | | | | |
| **Category** | **1 - Developing** | **2 – Satisfactory** | **3 - Exemplary** | **Score** | **Feedback** |
| **Outcomes Identified** | Outcomes to be assessed were not clear | Outcomes to be assessed were identified but were not aligned to CSLOs | PLOs or MSLOs to be assessed were identified and aligned with CSLOs | **3** |  |
| **Scope of Assessment** | The assessment was given by only one faculty member and/or to one class | The assessment was given by a few faculty members to several classes, but it was not district-wide | The assessment was given district-wide by all faculty teaching the course. | **2** | **Things to think about: Does 16 questions accurately encompass the scope of your course? You have identified more competencies than questions on the test. Can you elaborate on how the test is structured?** |
| **Quality of Assessment** | The assessment did not have articulated criteria for assessment of knowledge, skills, and attitudes (e.g., rubrics, exemplary work). | The assessment somewhat articulated criteria for assessment of knowledge, skills, and attitudes (e.g., rubrics, exemplary work). | The assessment clearly articulated criteria for assessment of knowledge, skills, and attitudes (e.g., rubrics, exemplary work). | **2** | **It might be good to include a sample of the bank or identify which questions need to be addressed. Any patterns noticed like students all missing the same question.** |
| **Interpreting Results** | Data of assessment results was not provided. | Data of assessment results was provided and there was evidence that the results were somewhat analyzed | Data of assessment results was provided and there was evidence that the results were analyzed in depth | **2** | To provide constructive feedback, I would suggest that you consider providing more specific information about the PLOs, MSLOs, or CSLOs that were assessed and how proficiency was defined for each of them. This will help to ensure that your response is clear and focused on the specific learning outcomes that were assessed. |
| **Reflection and Future Action** | Reflection of the results of the assessment was not apparent and no changes and/or improvements based on them were identified. | Reflection of the results of the assessment was somewhat clear and one change and/or improvements based on them was identified. | Reflection of the results of the assessment was clear and several changes and/or improvements based on them were identified. | **1** | It's great to see that you are focusing on using the outcomes of the assessment process to guide your instructional decisions. To provide constructive feedback, I would suggest that you consider being more specific about which concepts the students struggled with and how you plan to address those specific areas. This will help to ensure that your response is actionable and focused on addressing the needs of your students. |
| **Additional Comments:**  Overall, your response is a good starting point, but providing more specific details and context will help to ensure that your assessment results are more meaningful and actionable | | | | | |



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| **Course or Program Assessment Details Due May 18, 2023** |
| **1. Program name or course name and number**: General Chemistry, CHM-151 |
| **2. Division in which the program or course is located**: Physical Sciences |
| **2. Date form completed**: 05/17/23 |
| **3. Name of person completing report**: Bhumsamudram Jagadish |
| **4. Semester and year in which the assessment was conducted**: Spring 2023 |
| **5. Number of student participants**: 32 |
| **6. Number of faculty/staff participants**: 2 |
| **7. What PLOs and/or MSLOs and CSLOs did you assess for this baseline assessment? (For clarity, please label each measure listed as a PLO, MSLO, or CSLO.)**  There will be 16 questions each corresponding to one of the 16 MSLO for CHM-151. All the  questions covered 2 and 4 of the CSLO. The MSLO for CHM-151 is sent as an attachment  with this document. |
| **8. Describe the assessment method used and the criteria for successful achievement of student learning outcomes. (e.g., rubrics, licensing exam, internship, portfolio, exam, quiz, research paper, performance exam, EAC, etc.)**  The assessment was given as a quiz in Blackboard ultra. Each of the 16 questions are from a question pool. |
| **9. What percentage of the participating students were proficient in the PLOs, MSLOs or CSLOs?  What percentage of correct answers was determined as proficient? (For example, a student has to answer 70% of the questions correctly to be considered proficient.)**  24 of the 32 participated (75%), students had answered 70% or more of the questions correctly. |
| **10. What changes/improvements were made or will be made in response to the outcomes of the assessment process?**  Students may not get the same question wrong each year. Emphasis will be given to the entire course and try to increase the percentage. |
| **Additional Comments or feedback on the Assessment Process (Optional):** |