

**Assurance of Student Learning  
2018-2019**

Ogden College of Science and Engineering

Chemistry Department

Chemistry MS (059)

**Use this page to list learning outcomes, measurements, and summarize results for your program. Detailed information must be completed in the subsequent pages.**

**Student Learning Outcome 1:** Our graduates will have the ability to communicate effectively in written form.

**Instrument 1** Literature reviews written by the students in CHEM 516 (Chemical Literature Review)

Based on your results, circle or highlight whether the program met the goal Student Learning Outcome 1.

**Met**

**Not Met**

**Student Learning Outcome 2:** Our graduates will have the ability to communicate effectively in oral form.

**Instrument 1** Oral presentation of literature review in CHEM 598 (Graduate Seminar)

**Instrument 2** Oral presentation of students' research results in CHEM 598 (Graduate Seminar)

Based on your results, circle or highlight whether the program met the goal Student Learning Outcome 2.

**Met**

**Not Met**

**Student Learning Outcome 3:** Our graduates will have the ability to design and propose effective experiments.

**Instrument 1** Research proposals written by the students in CHEM 588 (Research Proposal)

Based on your results, circle or highlight whether the program met the goal Student Learning Outcome 3.

**Met**

**Not Met**

**Program Summary (Briefly summarize the action and follow up items from your detailed responses on subsequent pages.)**

1. Evaluation of first draft vs. final report using the Written Communication Rubric (Outcome 1; Instrument 1 and Outcome 3; Instrument 1)
2. Evaluation of literature oral presentation vs. research presentation using the Oral Communication Rubric (Outcome 2; Instrument 1 and 2)

### Student Learning Outcome 1

|   |   |  |                |
|---|---|--|----------------|
| <b>Student Learning Outcome</b>   | Our graduates will have the ability to communicate effectively in written form.   |  |                |
| <b>Measurement Instrument 1</b>   | Our graduates will have the ability to communicate effectively in written form. First drafts and final reports will be scored for students taking CHEM 516 Chemical Literature Review using a Written Communication Rubric. The instructors that taught this course will score their respective students. |  |                |
| <b>Criteria for Student Success</b>   | There should be an increase in rubric scores from the first paper drafts to the final paper. Students should score an average of 2.6 out of 4 on the final report.  |  |                |
| <b>Program Success Target for this Measurement</b>  | 75%   | <b>Percent of Program Achieving Target</b> | 80%            |
| <b>Methods</b>  | All 15 students that took this course during the 2018-2019 AY were evaluated by their respective instructor of record.  |  |                |
| <b>Based on your results, circle or highlight whether the program met the goal Student Learning Outcome 2.</b>  |   | <b>Met</b>                                 | <b>Not Met</b> |
| <b>Actions</b> (Describe the decision-making process and actions planned for program improvement. The actions should include a timeline.)   |   |  |                |
| For future classes, students will be provided a modified AACU rubric that better coincides with the requirements for scientific writing in CHEM 516. Students in this course will be given two example reports. One that is deemed a 1 on the rubric and the other a 4. Students will receive a rubric score for his/her first draft with details on how to improve the report for the final paper. |   |  |                |
| <b>Follow-Up</b> (Provide your timeline for follow-up. If follow-up has occurred, describe how the actions above have resulted in program improvement.)   |   |  |                |
| The AACU rubric will be refined to fit the requirements for scientific writing.   |   |  |                |

### Student Learning Outcome 2

|   |  |  |            |
|---|--|--|------------|
| <b>Student Learning Outcome</b>   | Our graduates will have the ability to communicate effectively in oral form.   |  |            |
| <b>Measurement Instrument 1</b>   | <b>Oral presentation of literature review in CHEM 598 (Graduate Seminar)</b><br>Students taking CHEM 598 will be scored using an Oral Communication Rubric. The instructors that teach this course and audience faculty will score these students. |  |            |
| <b>Criteria for Student Success</b>   | Students will receive an average rubric number that will be compared to their research presentation rubric number from Instrument 2.   |  |            |
| <b>Program Success Target for this Measurement</b>  | 75%  | <b>Percent of Program Achieving Target</b> | 80%        |
| <b>Methods</b>  | All 5 of the students that took this course during the 2018-2019 AY were evaluated by their respective instructor of record.   |  |            |
| <b>Measurement Instrument 2</b>   | <b>Oral presentation of students' research results in CHEM 598 (Graduate Seminar)</b>  |  |            |
| <b>Criteria for Student Success</b>   | <b>There should be an increase in rubric scores from the literature review presentation compared to the research presentation. Students should score an average of 2.6 out of 4 on the research presentation.</b>                                  |  |            |
| <b>Program Success Target for this Measurement</b>  | 75%  | <b>Percent of Program Achieving Target</b> | <b>80%</b> |
| <b>Methods</b>  | Thirteen students that took this course during the 2018-2019 AY were evaluated by their respective instructor of record.   |  |            |
| <b>Based on your results, circle or highlight whether the program met the goal Student Learning Outcome 2.</b>  |  |  | <b>Met</b> |
| <b>Not Met</b>  |  |  |            |
| <b>Actions</b> (Describe the decision-making process and actions planned for program improvement. The actions should include a timeline.)<br>For future classes, students will be provided a refined AACU rubric that better coincides with the requirements for CHEM 598. Students will receive this refined rubric and rubric score for his/her first draft with details on how to improve the research presentation. |  |  |            |
| <b>Follow-Up</b> (Provide your timeline for follow-up. If follow-up has occurred, describe how the actions above have resulted in program improvement.)<br>The AACU oral communication rubric will be refined to fit the requirements for scientific presentations.   |  |  |            |

### Student Learning Outcome 3

|  |  |  |            |
|--|--|--|------------|
| <b>Student Learning Outcome</b>  | Our graduates will have the ability to design and propose effective experiments.   |  |            |
| <b>Measurement Instrument 1</b>  | <b>Research proposals written by the students in CHEM 588 (Research Proposal)</b><br>Students will demonstrate through a written report and an oral defense their ability to formulate independent experimental plans based on their thesis topic. |  |            |
| <b>Criteria for Student Success</b>  | Students scoring and A or B in this class will be considered achieving this outcome.   |  |            |
| <b>Program Success Target for this Measurement</b>   | 100%   | <b>Percent of Program Achieving Target</b> | 100%       |
| <b>Methods</b>   | Twelve students took this course during the 2018-2019 AY and grades were tabulated.  |  |            |
| <b>Based on your results, circle or highlight whether the program met the goal Student Learning Outcome 3.</b>   |  |  | <b>Met</b> |
| <b>Actions</b> (Describe the decision-making process and actions planned for program improvement. The actions should include a timeline.)  |  |  |            |
| The student's research committee will attend the oral defense and read the corresponding written report beforehand. Students that received a grade of A or B will be considered to have achieved this outcome. |  |  |            |
| <b>Follow-Up</b> (Provide your timeline for follow-up. If follow-up has occurred, describe how the actions above have resulted in program improvement.)  |  |  |            |
|  |  |  |            |