

Chemistry

Annual Program Report Template

Year:	2022-2023
Program:	MS in Chemistry
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Summary of Continuous Improvement Efforts since Last Report

Provide a brief description of how assessment results have been used for program improvement. Point to a specific example of how an assessment provided the program with data it could use for improvement and what that improvement was, if possible, also show evidence of the improvement. You may look at data from the two previous academic years to support this case.

Respond here:

Our main goal is to provide students with skills required for them to succeed as working chemists. The learning outcomes involve demonstrating competency in oral communication skills, expertise in scientific writing and ability to effectively perform chemical research. Our assessments for each category have been used for program improvement all described in table1. One specific example on how an assessment provided evidence for improvement is on chemical research performance and oral communication skills. In both, the benchmark expectations of 80% of students scoring was 3.3/4.0 or above. 83% of the students averaged 3.3/4.0 or above in 2021-2022 increased to 100% in 2022-2023 (See table 1) for oral communications skills and chemical research performance. It is important to note that there is a small number of students for research, and we will continue evaluating chemical research performance as well as oral communication skills and scientific writing.

Program Highlights Since Last Report

Identify and briefly discuss any programmatic curriculum changes made since the last report (e.g. new courses, course changes, SLO changes, course deletions).

NA

Respond here:

Table 1. Assessment Results and Analyses for Current Cycle.

STAGE 1: PLAN				STAGE 2: DO		STAGE 3: STUDY
Departmental Student Learning Goal	Program Student Learning Outcome	Assessment	Assessment Method/Location	Benchmark Expectations	Data Results	Actions/Goals Based on Data Results* What do the data tell you? How will you use this data? How were data from the last cycle used to make changes during this cycle, and What were the results of those changes?
The goal is to provide students with the skills required for them to succeed as working chemists.	Graduate Chemistry students will demonstrate competency in oral communication skills.	The oral presentation skills of chemistry graduate students will be assessed during a presentation of their research project/final class/capstone and assessed by a review committee. The assessment rubric was developed by the chemistry faculty members.	The oral presentation skills of chemistry graduate students will be assessed during a presentation of their research project/final class/capstone and assessed by a review committee. The assessment rubric was developed by the chemistry faculty members. This was chosen because these are skills in which our graduate students must exhibit competency as	80% of students will score an average of 3.4/4.0 on the rubric.	<p>2021-2022</p> <p>83% of students scored an average of 3.3/4.0 or above.</p> <p>2022-2023</p> <p>100% of students scored an average of 3.4/4.0 or above. The average score was 3.66/4.0</p>	<p>Comparing with the previous evaluation year there is an increase in the evaluation results from 83% to 100%. We plan to increase the benchmark expectations in the next year, as the number of students assessed was limited.</p> <p>According to this year's results from the rubric, comprehension was the weakest component. We will mainly focus on improving understanding/comprehension next year.</p>

			working chemists.			
The goal is to provide students with the skills required for them to succeed as working chemists.	Graduate Chemistry students will demonstrate expertise in standard scientific writing and the use of English in preparing reports.	Graduate Chemistry students scientific writing skills will be assessed by a review committee as part of a research or scientific communication course. The written material will be evaluated using a rubric developed by the chemistry faculty members. This was chosen because these are skills in which our graduate students must exhibit competency as working chemists.	Graduate Chemistry students scientific writing skills will be assessed by a review committee as part of a research or scientific communication course. The written material will be evaluated using a rubric developed by the chemistry faculty members. This was chosen because these are skills in which our graduate students must exhibit competency as working chemists.	80% of students will score an average of 3.3/4.0 on the rubric.	<p>2021-2022</p> <p>55% of the students scored an average of 3.3/4.0 or above.</p> <p>2022-2023</p> <p>47% of the students scored an average of 3.3/4.0 or above.</p>	<p>The assignments to evaluate writing skills were more focused on biochemistry topics this year. The action plan is to have two tracks of topics to be covered, one with more focus on chemistry and the other one on biochemistry. We anticipate that this will impact the average score and the percentage of students who score 3.3/4.0 and above will increase.</p> <p>According to this year's results from the rubric, we will mainly focus on improving the quality of information presented during the written assignments.</p> <p>Although the target was still not met, there was no significant change in student scores from 2021-2022 to the current 22-23 AY</p>
The goal is to provide students with the skills required for them to succeed as working chemists.	Graduate Chemistry students will demonstrate the ability to effectively perform chemical research.	Chemistry masters students are trained to function as professional chemists. A	Chemistry masters students are trained to function as professional chemists. A	80% of students will score an average of 3.4/4.0 on the rubric.	<p>2021-2022</p> <p>83% of students scored an average of 3.4/4.0 or above on the rubric.</p>	Comparing with the previous evaluation year there is an increase in the evaluation results from 83% to 100%. We plan to increase the benchmark expectations in the next year, as only a limited number of

		<p>committee will evaluate the students' research results using a rubric developed by the chemistry faculty members. This was chosen because these are skills in which our graduate students must exhibit competency as working chemists.</p>	<p>committee will evaluate the students' research results using a rubric developed by the chemistry faculty members. This was chosen because these are skills in which our graduate students must exhibit competency as working chemists.</p> <p>Analysis was done using the methodology described above by evaluating their research skills in their presentation via quality of their data collection/analysis and how it was concluded. Rubric was utilized to get the findings.</p>		<p>2022-2023</p> <p>100% of students scored an average of 3.4/4.0 or above on the rubric. The average score was 3.8/4.0.</p>	<p>students were surveyed. According to this year's results from the rubric the quality of data analysis was the weakest component. We will therefore mainly focus on improving the quality of data analysis next year.</p>
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Table 2. Continuous Improvement Results Since Last Report

Stage 4: ACT		
Actions/Goals Based on Data Results <i>*Copy last cycle's actions/goals and report on progress toward continuous improvement on those here.</i>	Status <i>C=Complete P=Progressing N=No Action Taken</i>	Discussion of Status <i>If C, describe efforts that led to accomplishment of actions/goals. If P, provide update on progress made toward accomplishing actions/goals and what tasks remain If N, discuss why action toward accomplishing actions/goals has been delayed and what work will be initiated toward accomplishment.</i>
The goal is to provide students with the skills required for them to succeed as working chemists.		
Outcomes include demonstrating competency in oral communication skills, expertise in standard scientific writing and use of English preparing reports and effectively perform research at an introductory level.	P	<p>We will continue our actions to evaluate oral communication skills (described in table 1). Comparing with the previous evaluation year there is an increase in the evaluation results from 83% to 100%. We plan to increase the benchmark expectations in the next year. According to this year's results from the rubric, comprehension was the weakest component of those evaluated. We will mainly focus on improving understanding/comprehension next year.</p> <p>We will continue our actions to evaluate writing skills (described in table 1). The assignments to evaluate writing skills were more focused on biochemistry topics this year. The action plan is to have two tracks of topics to be covered, one with more focus on chemistry and the other one on biochemistry. We anticipate that this will impact the average score and the percentage of students who score 3.3 and above will increase. According to this year's results from the rubric, we will mainly focus on improving the quality of information presented in writing this year. Although the target was still not met, there was no significant change in student scores from 2021-2022 to the current 22-23 AY</p>

		<p>We will continue our actions to evaluate chemical research performance (described in table 1). Comparing with the previous evaluation year there is an increase in the evaluation results from 83% to 100%. We plan to increase the benchmark expectations in the next year as only a limited number of students were surveyed. According to this year's results from the rubric the quality of data analysis was the weakest component assessed. We will mainly focus on improving the quality of data analysis next year.</p> <p>In addition, we plan to add tasks to evaluate some of the upper-level classes for scientific writing and oral communication skills in the future.</p>