Chemistry

Annual Program Report Template

Year:	2021-2022		
Program:	BA/BS in Chemistry & Forensic 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 scientific writing. 50% of the students averaged 3.3 or above in 2020-2021 increased to 70% in 2021-2022 (See table 1). Another one is research in which the data is above the benchmark expectations. 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

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Table 1. Assessment Results and Analyses for Current Cycle.

STAGE 1: PLAN			STAGE 2: DO		STAGE 3: STUDY	
Departmental	Program Student	Assessment	Assessment	Benchmark	Data Results	Actions/Goals Based on Data
Student Learning	Learning Outcome		Method/Locati	Expectations		Results* What do the data tell
Goal			on			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	Undergraduate	Undergraduate	Undergraduate	80% of students	2020-2021	The students were affected
provide students	Chemistry students will	students	students	will score an		during covid pandemic and it
with the skills	demonstrate	participating in	participating in	average of 3.3 on	86% of students	got improved.
required for them to	competency in oral	research will	research will	the rubric.	score an	
succeed as working	communication skills.	make a formal	make a formal		average of 3.3	
chemists.		presentation at	presentation at		or above.	
		the end of the	the end of the			
		course. A	course. A			
		committee of	committee of		2021-2022	
		external	external			
		reviewers will	reviewers will		100% of	
		evaluate the	evaluate the		students score	
		presentations	presentations		an average of	
		using the	using the		3.3 or above.	
		following	following			
		assessment	assessment			
		rubric	rubric			
		developed by the chemistry	developed by the chemistry			
		faculty	faculty			
		members. This	members. This			
		was chosen	was chosen			
		because these	because these			
		are skills in	are skills in			
		which our	which our			
		undergraduates	undergraduates			
		must exhibit	must exhibit			
		competency as	competency as			

		working chemists.	working chemists.			
The goal is to provide students with the skills required for them to succeed as working chemists.	Undergraduate Chemistry students will demonstrate expertise in standard scientific writing and the use of English in preparing reports.	In CHEM 4x71 Introduction to Research, and CHEM 4381 Chemical Communication s, Scientific writing skills of undergraduate students will be evaluated .In addition to that they prepare a final presentation. These presentations will be evaluated by a committee of external reviewers using an assessment rubric developed by the chemistry faculty members.	In CHEM 4x71 Introduction to Research, and CHEM 4381 Chemical Communication s, Scientific writing skills of undergraduate students will be evaluated .In addition to that they prepare a final presentation. These presentations will be evaluated by a committee of external reviewers using an assessment rubric developed by the chemistry faculty members. Analysis was done using the methodology described above by evaluating their writing communication	80% of students will score an average of 3.3 on the rubric.	2020-2021 50% of the students scored an average of 3.3 or above. 2021-2022 70% of the students scored an average of 3.3 or above.	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 will more focus on chemistry and the other one to biochemistry. We anticipate that this will impact the average score and the percentage of students who score 3.3 and above will increase. Although target still not met, there was an increase in student scores from 2020-2021 to the current 21-22 AY

skills in their presentation. Rubric was utilized to get the findings. The goal is to Our students will be Chemistry Chemistry 80% of students 2020-2021	
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The goal is to Our students will be Chemistry Chemistry 80% of students 2020-2021	
provide students able to effectively majors in CHEM majors in CHEM will score an And	
with the skills perform chemical 4x71 4x71 average of 3.3 on 2021-2022	
required for them to research at an (Introduction to Introduction Introduc	
succeed as working introductory level. Research Research 100% of	
chemists. courses where x courses where students scored	
= 2, 3, 4 credit x = 2, 3, 4 credit an average of	
hours) are hours) are 3.3 on the	
trained to trained to rubric.	
function as function as	
professional professional	
chemists. An chemists. An	
external review external review	
committee will committee will	
evaluate a evaluate a	
representative representative	
section of final section of final	
research research	
presentations presentations	
using the using the	
following following	
assessment assessment	
rubric rubric	
developed by developed by	
the chemistry the chemistry	
faculty	
members. This members. This	
was chosen was chosen	
because these because these	
are skills in are skills in	
which our which our	
undergraduates undergraduates	
must exhibit must exhibit	
competency as competency as	

working	working	
chemists.	chemists.	
	Analysis was	
	done using the	
	methodology	
	described	
	above by	
	evaluating their	
	research skills	
	in their	
	presentation	
	via quality of	
	their data	
	collection/anal	
	ysis and how it	
	was concluded.	
	Rubric was	
	utilized to get	
	the findings.	

Table 2. Continuous Improvement Results Since Last Report

Stage 4: ACT		
Actions/Goals Based on Data Results	Status	Discussion of Status
*Copy last cycle's actions/goals and report on	C=Complete	If C, describe efforts that led to accomplishment of
progress toward continuous improvement on those	P=Progressing	actions/goals.
here.	N=No Action Taken	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.
The goal is to provide students with the skills		
required for them to succeed as working chemists.		
Outcomes include demonstrating competency in	Р	We will continue our actions to evaluate writing
oral communication skills, expertise in standard		skills (described in tabel1). Our actions show also
scientific writing and use of English preparing		there is an increase in assessment results between
reports and effectively perform research at an		two different years. We plan to add tasks to
introductory level.		evaluate some of the upper level classes for
		scientific writing and oral communication skills in
		the future as well.