

End of Year Assessment Report for Programs

Program: Chemistry	Year: 2019-2020
Contact Person: Daryl Cox	Submission date: May 2020

Program Mission Statement

The Department of Chemistry is committed to excellence in chemical science education. It assumes that through the study of chemistry one can understand unique aspects concerning the nature of God and His creation. The following quote from Johannes Kepler exemplifies the Department's position and teaching philosophy concerning the motivation for the pursuit of scientific knowledge.

"Scientists are the priests of the highest God in regard to the book of nature. It befits us to be thoughtful not for ourselves but for the glory of God."

Consequently, chemistry becomes a part of the College's concept of Christian education.

Program Objectives

1. Demonstrate an understanding of major concepts, theoretical principles and experimental findings in chemistry.
2. Demonstrate a knowledge and understanding of the proper procedures and regulations for safe handling and use of chemicals.
3. Understand how to properly carry out experiments, and appropriately record and analyze the results.
4. Demonstrate an ability to solve problems in chemistry using the tools, techniques, and data available.
5. Demonstrate effective writing and oral communication of concepts and experimental results.
6. Discuss development of major scientific ideas and relate chemistry to and integrate chemistry with other areas of knowledge including issues of public concern.

Assessment Methods and Benchmarks – SPRING SEMESTER

Program Objective	Introducing	Developing	Mastering
1. Demonstrate an understanding of major concepts, theoretical principles and experimental findings in chemistry.	CHEM 112 Exams Benchmark: $\geq 70\%$ 87% of students met the objective	CHEM 301 Laboratory Notebooks and Laboratory Exam Benchmark: $\geq 70\%$ 100% of the students met the objective 100% of the chemistry majors met the objective	CHEM 305 Exams Benchmark: $\geq 70\%$ 83% of the students met the objective 83% of the chemistry majors met the objective
2. Demonstrate a knowledge and understanding of the proper procedures and regulations for safe handling and use of chemicals.	CHEM 112 Exams Benchmark: $\geq 70\%$ 87% of students met the objective	CHEM 301 Lab Safety Quiz Benchmark: $\geq 80\%$ 100% of the students met the objective	CHEM 305 Lab Safety Quiz Benchmark: $\geq 80\%$ 100% of the students met the objective
3. Understand how to properly carry out experiments, and	Not assessed this year	Not assessed this year	Not assessed this year

appropriately record and analyze the results.			
4. Demonstrate an ability to solve problems in chemistry using the tools, techniques, and data available.	CHEM 112 Laboratory Notebooks Benchmark: $\geq 70\%$ 100% of the students met the objective	CHEM 301 Laboratory Notebooks Benchmark: $\geq 70\%$ 100% of the students met the objective	CHEM 305 Exams and Penny Lab Benchmark: $\geq 70\%$ 83% of the students met the objective 83% of the chemistry majors met the objective
5. Demonstrate effective writing and oral communication of concepts and experimental results.	Not assessed this year	Not assessed this year	Not assessed this year
6. Discuss development of major scientific ideas and relate chemistry to and integrate chemistry with other areas of knowledge including issues of public concern.	Not assessed this year	Not assessed this year	Not assessed this year

Analysis of Assessment Findings – SPRING SEMESTER

Discuss the significance of the findings of the current semester in light of the desired results, findings from previous semesters/years, recent changes in the program or the assessment process, etc. What did you learn from the assessment? In particular:

- (1) Not being able to give the ACS standardized exams this year leaves a hole in our ongoing assessment.
- (2) It is difficult to determine what impact program changes have had on student learning due to the coronavirus situation.
- (3) Our assessment thrown out of whack because of the move to online learning.

Sharing and Discussion of Assessment Findings – SPRING SEMESTER

We really don't want to make any assessment changes based on this semester's data.

Use of Assessment Findings for Program Improvement (Action Plan) – SPRING SEMSTER

Maybe a supplemental instructor would help with student learning.

When planning for next year, we need to be ready for an online semester. This will require us to be more innovative when it comes to labs.

Full Year Reflection - FALL/INTERTERM/SPRING TERMS

This section will not deal with the past but focus on the future. Any analysis of this year will be of limited use for next year. The department will be merging with biology. The details of the merger have not been revealed to either Eric Nord, Chair of Biology or Daryl Cox, Chair of Chemistry. With the downsizing of the department, Daryl Cox is retiring, and the position he held will be eliminated. There is concern that the needs of the students will be difficult to meet because of the lack of faculty.

Supporting Documents