

Program Assessment Plan, 2014-2019

Department/Program: Chemistry and Biochemistry

Option: BS Chemistry, BS Biochemistry, BA Chemistry

Assessment Activity Outcomes to be assessed, data analysis, assessment plan review	Time Period	Direct Measures Describe student work to be used to provide evidence for outcome	Indirect Measures Describe instrument: survey, interview	Where will evidence be gathered? Course name, internship, etc	What results would indicate success? What is the target?	Status
SLO 1: Demonstrate basic knowledge in the following areas of chemistry: analytical, biochemistry, inorganic, organic, physical.	2017-2018	Final exam M/C questions from ACS standardized exams in organic, inorganic, physical, analytical, and biochemistry		Chem 333/4 Chem 401, Chem 321, Chem 461/2, Chem 351/2	Performance at or above national average for the standardized exam questions	In progress
SLO 2: Organize and communicate scientific information clearly and concisely, both verbally and in writing.	2016-2017	Independent project/classroom oral presentation and written report; evaluated with an appropriate rubric		Chem 422L, Chem 411, Chem 433, Chem 495, Chem 499	Performance at the “good” or “excellent” levels for all rubric evaluation categories ($\geq 60/100$)	Future assessment
SLO 3: Effectively utilize the scientific literature, including the use of modern electronic search and retrieval methods, to research a chemistry topic or to conduct chemical research.	2016-2017	Final research report/literature review; evaluated with a written report rubric		Chem 495, Chem 499	Performance at the “good” or “excellent” levels for all rubric evaluation categories ($\geq 60/100$)	Future assessment
SLO 4: Work effectively and safely in a laboratory environment, including the ability to follow experimental chemical procedures and maintain a proper lab notebook.	2018-2019	Lab notebook reviews in Chem 101/2L, Chem 321L, Chem 333/4L, Chem 422L, Chem 411, Chem 401L; performance on lab safety quiz; evaluation with a lab notebook rubric; annual monitoring of Department accident reports		Chem 321L, Chem 422L, Chem 411; Chem 101L, Chem 333/4L, Chem 422L, Chem 401L	Performance at the “good” or “excellent” levels for all rubric evaluation categories ($\geq 15/20$); Scores of $\geq 4/5$ on lab safety quiz	In progress
SLO 5: Effectively utilize modern chemical instrumentation to obtain data and perform research.	2014-2015	Experimental results in Chem 411, Chem 433, Chem 495		Chem 411, Chem 433, Chem 495	$\geq 4/5$ unknowns correctly identified in Chem 433 and Chem 411; quality of spectra obtained in Chem 495 (assessed in written report rubric)	In progress
SLO 6: Perform qualitative and quantitative chemical analysis.	2018-2019	Experimental results in Chem 321L, Chem 422L		Chem 321L, Chem 422L	average of 80% score on quantitative unknowns in Chem 321L	In progress
SLO 7: Describe the impact of chemistry on our world, including the environment, the economy, and medicine.	2015-2016	A writing assignment on the chemical implications or on how chemistry is impacting a field. Evaluated with an appropriate assignment rubric		Chem 101/2, Chem 333/4; Chem 401; Chem 499	Performance at the “good” or “excellent” levels for all rubric evaluation categories ($\geq 60/100$)	Future assessment
SLO 8: Demonstrate an ability to determine the scientific validity of a claim that pertains to consumer products, the environment or the life sciences.	2015-2016	Set of appropriate multiple-choice questions.		Chem 101L, Chem 495, 499	$\geq 75\%$ of multiple choice questions answered correctly	Future assessment

Curriculum Alignment: Resources for Assessment

In which courses or activities is relevant information covered?

Which courses or activities provide student learning opportunities for the program learning outcome?

Specify whether the material is (I) introduced, (D) developed or (M) mastered.

Department/Program Courses	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8
Chem 101/D/L	I			I			I	I
Chem 102/D/L	I			I			I	
Chem 321/L	I			D	I	I		
Chem 422/L	D	D	D	D	D	D		
Chem 333/D/L	I			D			D	
Chem 334/L	D			D			D	
Chem 351/L	D		D	D				
Chem 352/L	D		D	D				
Chem 401/L	D	D		D			M	D
Chem 411	M	D	D	M	M	M		
Chem 433	M	M	M	M	M	M		
Chem 461	D	D	D					
Chem 462	M	M	M					
Chem 464	D	M	M					
Chem 465	M	M	M					
Chem 495	M	M	M	M				
Chem 499	M	M	M				M	M