

Department/Unit Chemistry and Biochemistry College/School CNSM

Chemistry B.S. program

NOTE: Document covers the Fall 2011 - Spring 2014. Please contact Bill Simpson or the Provost's office for prior years.

Table 4.1 Outcomes Assessment Implementation Summary			
Complete a separate table for each degree and certificate program			
	Report period		
	AY 2011-12	Fall 2012- Spring 14	
Assessment information	<p><i>SLOA criteria 1) Instructors of 100-level courses met on 18 May 2012 to discuss curricular issues. In the 2011-12 Academic year, lower level ACS examinations were given for General Chemistry I and II and Organic Chemistry. All scores were near or above the national norms for these examinations. Lack of student success in some cases seemed to be related to student disengagement from the material.</i></p> <p><i>SLOA criteria 2) We gave the ACS Diagnostic of Undergraduate Chemical Knowledge 2008 (DUCK 08) examination to two senior Chemistry</i></p>	<p><i>SLOA criteria 1) Instructors of 100-level courses met on 14 May 2013 and then again on 16 May 2014 to discuss curricular issues. In both Academic years, lower level ACS examinations were given for General Chemistry I and II. All scores were generally near national norms for these examinations. We discussed best practices and ways to assess topical coverage in these courses.</i></p> <p><i>During AY 2012-13, General Chemistry instructors also explored the possibility of switching textbooks and electronic homework systems, in order to manage better the grading and reporting of</i></p>	

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	<p><i>majors in Fall 2011 and to seven senior Chemistry majors in Spring 2012. The median score was 70th percentile on national norm data. Low was 30th percentile, high was 84th percentile -- See "UAF_DUCK08_AY2011-12.pdf"</i></p> <p><i>SLOA criteria 3) We collected and archived all reports from Chem F488. Redacted versions of the reports will be available to our ACS accreditation body. Abstracts of the work done are available at: http://www.uaf.edu/chem/research</i></p> <p><i>SLOA criteria 4) On 17 May 2012, we had a meeting of instructors of capstone writing and oral intensive courses. One instructor's opinions / evaluation is documented in the file "upper lab writing assessment."</i></p> <p><i>SLOA criteria 5) We sent out exit interview paperwork for all exiting students. There were two BS students replying, and both were entering graduate school at the time of graduation.</i></p>	<p><i>homework on Blackboard. This change was made and we successfully used the new book and homework system in the 2013-14 Academic year.</i></p> <p><i>SLOA criteria 2) We gave the ACS Diagnostic of Undergraduate Chemical Knowledge 2008 (DUCK 08) examination to four senior Chemistry majors in Fall 2012 and to two senior Chemistry majors in Spring 2013. The median score was 80th percentile on national norm data. Low was 61st percentile, high was 99th percentile -- See "UAF_DUCK08_AY2012-13.pdf". During the 2013-14 Academic year, the DUCK exam was not given, due to low enrollment in Chem F434, the class in which this exam is normally given.</i></p> <p><i>SLOA criteria 3) We collected and archived all reports from Chem F488. All undergraduate research reports are stored on our departmental shared file system and are available to all department members. Others wishing to see these reports can request redacted versions.</i></p> <p><i>SLOA criteria 4) One of the writing</i></p>

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		<p><i>intensive course instructors administered a survey at the end of her course that gauges student opinion on how the course has improved their writing skills. Overall opinion is that the course was very beneficial for improving students' understanding on how to evaluate data, formulate conclusions, and write a scientific paper on the results. Furthermore, the undergraduate research Chem F488 reports provide insight into our students' ability to write scientific papers.</i></p> <p><i>SLOA criteria 5) We sent out exit interview paperwork for all exiting students. During the 2012-13 Academic year, there were four BS students replying, and three were entering graduate school at the time of graduation. The fourth BS student was undecided concerning whether to go to graduate school or to take a job. During the 2013-14 Academic year, there were two BS students replying, and one was entering graduate school at the time of graduation. The other student intended to be a stay-at-home parent until their child was old enough to enter school.</i></p>

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Conclusions drawn from the information collected above and how are faculty collectively involved in drawing conclusions	<p><i>SLOA criteria 1) More frequent examinations do NOT give better student involvement. There was discussion about ways to engage students further and ideas such as increasing connection between lecture and laboratory and possibly using some small group learning activities in lab emerged.</i></p> <p><i>SLOA criteria 2) The results of the exit examination were studied for knowledge across the curriculum, and all areas were good.</i></p> <p><i>SLOA criteria 3) Reports were of good quality.</i></p> <p><i>SLOA criteria 4) The writing and oral skills of our graduates was found to be of high quality and the courses were found to be effective. It was considered that students should be given more reading assignments with scientific literature and they should write graded reviews of papers.</i></p> <p><i>SLOA criteria 5) We feel we need a better way to get information about employment of our B.S. graduates.</i></p>	<p><i>SLOA criteria 1) No clear problems were identified from the data collected. All levels of instruction in chemistry are judged satisfactory.</i></p> <p><i>General chemistry instructors found that the older (known as "OWL") electronic homework system was difficult to use, mainly due to its non-integration with Blackboard. This situation was improved with the new (called "Connect") homework system.</i></p> <p><i>SLOA criteria 2) The results of the exit examination were studied for knowledge across the curriculum, and all areas were good.</i></p> <p><i>SLOA criteria 3) Reports were of good quality.</i></p> <p><i>SLOA criteria 4) The writing and oral skills of our graduates was found to be of high quality and the courses were found to be effective.</i></p> <p><i>SLOA criteria 5) Our BS students successfully obtain employment or entrance to graduate school.</i></p>

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Curricular changes resulting from conclusions drawn above	<p><i>SLOA criteria 1) There will be attempts to increase connection between lecture and laboratory and plans to increase active learning in lab and lecture. We are also instituting the Chemistry Learning Center as a way to help students succeed in general chemistry.</i></p> <p><i>SLOA criteria 2) We are considering changes to the analytical curriculum. Those changes will be discussed further and with a new faculty member being hired in the area of Analytical / Environmental Chemistry.</i></p> <p><i>SLOA criteria 3) There will be no changes to our undergraduate research course or practices.</i></p> <p><i>SLOA criteria 4) We are still considering consolidation of the two capstone writing-intensive courses (434 and 413) to one unified capstone.</i></p> <p><i>SLOA criteria 5) We are considering ways to get better information on student outcomes, but students we personally know the outcome of are all employed or continuing their education.</i></p>	<p><i>SLOA criteria 1) Following considerations during the 2012-13 Academic year and starting in Fall 2013, General Chemistry instructors switched to a new textbook and to a new online homework system (Connect by McGraw-Hill). Connect is fully integrated with Blackboard and much easier to use. During the meetings listed above, faculty members shared best practices on teaching, which has been beneficial to our teaching program.</i></p> <p><i>SLOA criteria 2) No changes</i></p> <p><i>SLOA criteria 3) No changes.</i></p> <p><i>SLOA criteria 4) In the 2012-13 Academic year, Chem F413 was changed to Chem F314 to reflect the typical non-senior-student status of the students in that class. For that reason, we have stopped giving the DUCK (exit) exam in that class.</i></p> <p><i>SLOA criteria 5) No changes.</i></p>