Department/Unit Chemistry and Biochemistry **College/School** _CNSM_____

Chemistry M.S. programs

NOTE: This is a new document for the Academic year 2010-11. Please contact Bill Simpson or the Provost's office for prior years.

NOTE2: During the Fall 2012-Spring 2014 period, the department reorganized the M.S. programs. Prior to this time, the Chemistry M.S. program was small with only a few students and we had two other dedicated M.S. programs (in Biochemistry and Molecular Biology and Environmental Chemistry) that had larger enrollment. The reorganization shifted all M.S. students in our department to be under the Chemistry M.S. program, where we have three possible concentrations, Chemistry, Biochemistry and Neuroscience, and Environmental Chemistry. Due to this change, we now have larger numbers of students passing through the Chemistry M.S. program and better assessment data. The University also changed to requiring SLOA reporting every other year, so we now have seventeen (17) responses in the database of graduate program assessment forms and thus more meaningful data. Although we had not reported data in Spring 2013, we

Table 4.1 Outcomes Assessment Implementation Summary			
Complete a separate table for each degree and certificate program			
	Academic Year(s)		
	2010-11	**Fall 2012-Spring 2014**	
Assessment information	*Graduate program assessment forms were compiled in May/June 2011 and results were analyzed by considering whether students were deficient (below the expected level for their year in program), at expectation, or exceeding expectations. Due to*	*Graduate program assessment forms from Fall 2012 – Spring 2014 were compiled in May 2014 and results were analyzed by considering whether students were deficient (below the expected level for their year in program), at expectation, or exceeding expectations The percent of*	

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	limited numbers in the MS and MA programs, there were only two responses, and all areas had one student at expected level, one exceeding. *One student graduated with an MS degree in the summer of 2010, but our new assessment plan was just being established at that time, so no data was captured.* *Publication data was collected and are in departmental records.* *Employment: The M.S. graduate in this year is employed.*	*students exceeding the expectation minus the percent of deficient students is tabulated below:* 1. Specific knowledge of literature -12% 2. Ability to critically analyze literature -24% 3. Technical abilities 18% 4. Quantitative abilities 8% 5. General knowledge of field -6% 6. Presentation skills 18% 7. Writing Skills -18% *These primary data are used to address our first three learning objectives.* *These data showed a mix of success and areas needing improvement that is discussed below.* *Publication data was collected and are in departmental records.* *Employment: There were three Ph.D. graduates. All Ph.D. students are employed in field.*	
Conclusions drawn from the information collected above and how are faculty collectively involved in	*1) Technical abilities and presentation skills: Students scored well on points 3 (Technical) and 1 (Literature) and 5 (Knowledge of field) of the assessment survey. Annual progress reports also indicated students were making progress.*	*1) Technical abilities and knowledge to function as professionals: Students scored above expectation on points 3 (Technical abilities) and 4 (Quantitative abilities). However, it was of concern that students scored below expectation on points 1 (Literature), 2 (Analysis of Literature), and 5 (Knowledge of field).*	

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drawing conclusions	*2) MS grads will contribute to the field, MA grads do not have explicit research required: The assessment survey indicated good performance on critical thinking aspects, points 2 (Critical Literature) and 8 (PhD hypothesis development).* *3) Communications: Students performed well in oral (point 6) and written (point 7) communications.* *4) Employment: The one graduate of the MS program is employed in field.*	*Therefore, it was found that although students could technically carry out their work, they were lacking in ability to put work into context of the field. Annual reports also indicated that students needed to work on reading of literature.* *2) MS graduates can contribute to their field: Students were found to be presenting at conferences and graduates generally had a publication or manuscript ready for submission at end of degree.* *3) Communications: The data show a mixed success, where oral communications (Point 6 – presentation skills) were good, but written communications (Point 7) was below expectation. Annual reports also indicated students needed to work on writing and putting their work into the context of the field in which they work.* *4) Employment: Five M.S. students graduated in this two-year period. Two were employed in analytical laboratory situations, one was continuing education in a Ph.D. program and one entered professional school. The last M.S. graduate's family had a medical situation that the graduate needed to attend to.*	

		The graduate is beginning search for employment in the field.	
Curricular changes resulting from conclusions drawn above	*1) No changes.* *2) No changes.* *3) No changes.* *4) No changes.*	*1) and 3) Through the annual reporting process and initial analysis of SLOA data in May 2013, we found that students were not reading enough literature and writing about that background and their project. This was discussed in department meetings at the time of the reorganization of the M.S. programs to all be under the Chemistry program, and we decided to create a written comprehensive examination procedure for all M.S. students. This written comprehensive examination procedure is described at: http://chem.uaf.edu/comps/CHEMMSCompsPlan.pdf. Students are required to write a research proposal and defend it orally in their second semester in program. We hope that this change will address writing and improve the deficient points mentioned above.* *2) No changes.* *4) No changes.*	