Major Field Assessment Report (Dec. 2007- Dec. 2009)

B.S., Chemistry
Department of Chemistry and Physics

December 31, 2009

The purpose of the B.S. in Chemistry is to prepare students for professional and/or graduate study in Chemistry and in other fields that require considerable scientific knowledge and laboratory experience, and/or to train chemists for employment in industry.

Evaluation

This report is based on data gathered from the 8 students who completed the B.S. in Chemistry degree program during the calendar years 2008 and 2009.

Goal 1: *To provide students with knowledge in the field of chemistry.*

It is expected that students completing the undergraduate program in chemistry will compare favorably with other students in the nation graduating in a similar program on the basis of their ability to demonstrate laboratory and problem-solving skills in the areas of physical, organic, inorganic, and analytical chemistry. To assess the success of the curriculum, the major field assessment test is administered to graduate of the B.S. in Chemistry program during the spring semester of each academic year. The standards set forth by the Department of Chemistry and Physics for chemistry majors are: 75% of the graduates in the chemistry program graduating with a cumulative GPA of 2.00-2.75 will score above the 33rd percentile, 75% of the graduates in the chemistry program graduating with a cumulative GPA of 2.75-3.50 will score above the 50th percentile, and 75% of the graduates in the chemistry program graduating with a cumulative GPA above a 3.50 will score above the 66th percentile. The result is that 25% (1 out of 4) of the students with a cumulative GPA of 2.75–3.50 scored above the 50th percentile and 50% (2 out of 4) of the students with a cumulative GPA of greater than 3.50 scored above the 66th percentile. (There were no students in the cumulative GPA of 2.00-2.75 range). These results are not consistent with expectations (neither were the results consistent with expectations in 2007).

It is also expected that graduates will respond very favorably to the chemistry curriculum and overall learning environment. The expectation was that 90% of the students completing the chemistry program would be satisfied while the result indicates that 100% (8 out of 8) responded well to the curriculum. The Department agrees that this is not only a result of high-quality students, but also to a continued increase in the percentage of Chemistry majors involved in Undergraduate research and extracurricular activities made available through the Department of Chemistry and Physics.

Goal 2: *To develop a comprehensive understanding of the professional aspects of chemistry.*
It is expected that 80% of the students completing the undergraduate program in chemistry will demonstrate awareness of the diverse nature of chemistry and its applications as a body of knowledge and the importance of participation in professional societies, professional meetings and undergraduate research in the field of chemistry. For the students included in this report, 100% (8 of 8) felt they were given support to attend meeting and were afforded the opportunity to conduct undergraduate research. This is an area that the department has been working on strengthening and is evidenced by the number of students conducting undergraduate research each year. The average number of students performing undergraduate research has increased from 18 in 2003 to 75 in 2008. It is the belief of the department that this percentage will continue to remain high as we now have ten tenured/tenure-track professors actively conducting undergraduate research with four currently funded by external grants.

Goal 3: *To prepare students for career-based employment and/or graduate study.*
It is expected that 60% of the students completing the undergraduate program in chemistry will have career-based employment or will be in graduate/professional school within one year of graduation from Southeastern. For the eight graduates included in this report, all were either employed or admitted to graduate/professional programs immediately upon graduation from Southeastern: 50% (4 out of 8) were admitted to PhD programs, 25% (2 out of 8) were admitted to professional programs (Medical and Optometry school), and 25% (2 out of 8) were employed in a profession utilizing their Chemistry degree.

Outcome

The outcome of this assessment is that goals 2 and 3 were attained while goal 1 needs to be modified prior to the 2011 report.

Indication for Programmatic Change

Since the B.S. in Chemistry program is achieving the majority of its stated goals, no changes to the program are indicated at this time. However, results suggest that Goal 1 should be modified in the "Goal Attainment Framework". This report compares students from Southeastern to 158 other institutions across the country participating in the ETS chemistry field assessment exam. For this report, the mean for all 159 institutions was in the 45th percentile while the students graduating from Southeastern had a mean score in the 56.4th percentile. This result suggests that the students at Southeastern are performing slightly better than the mean score not only on this report, but the last as well. However, the department feels that the expectation that 75% of our students should score higher than the 33rd, 50th, or 66th percentile based on GPA range is somewhat excessive. We would therefore like to change the expectation to 50% for all GPA ranges.

GOAL ATTAINMENT FRAMEWORK

B.S., Chemistry
Department of Chemistry and Physics

Academic Years 2007-09

December 31, 2009

Expected Outcome	Much Less than Expected	Less than Expected	Expected	More than Expected	Much More than Expected
% of graduates with a cumulative GPA of 2.00-2.75 scoring above the 33rd percentile on the ETS Major Field Achievement Test in Chemistry	N/A	N/A	**75%**	N/A	N/A
% of graduates with a cumulative GPA of 2.75-3.50 scoring above the 50th percentile on the ETS Major Field Achievement Test in Chemistry	(1 of 4) 25%		**75%**		
% of graduates with a cumulative GPA above 3.50 scoring above the 66th percentile on the ETS Major Field Achievement Test in Chemistry		(2 of 4) 50%	**75%**		
% of graduates satisfied with their chemistry instruction, as indicated on the Southeastern Exit Survey			**90%**		(8 of 8) 100%
% of graduates who feel they were given opportunities and support for attending professional chemistry meetings while a student at Southeastern as evidenced by the Southeastern Exit Survey			**80%**		(8 of 8) 100%
% of graduates who have career employment or will be enrolled in graduate school as evidence by the Southeastern Chemistry Post Exit Survey			**60%**		(8 of 8) 100%