



To: Scott R. Furlong, Dean
College of Liberal Arts and Sciences

From: Steve Kimball, Co-Chair
Academic Affairs Council

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The Academic Affairs Council (AAC) has read and discussed the Chemistry Program Review. The Academic Affairs Council notes many strengths and accomplishments, as well as limitations and challenges for the Chemistry program, and offers recommendations that we hope will be useful in assisting this program to maintain both its high level of student interest and teaching excellence.

The mission of the Chemistry program at UWGB focuses on supporting the four touchstones of The Green Bay Idea through the use of problem-focused instruction. The Chemistry Program provides three different degree options in chemistry, including two options that are approved by the American Chemical Society.

Since the last program review, the American Chemical Society has modified the curricular guidelines that the program must follow. These modifications had allowed the Chemistry Department to modify its program to allow students to complete the upper level core in four semesters of study and to reduce the prerequisite structure of some electives making them available to more students.

The program graduates well-trained majors who are successful in gaining admission to graduate and professional programs and in finding employment in the chemistry field.

Strengths

The program continues to be approved by the American Chemical Society. Recent modifications from the American Chemical Society that must be followed to have program approval have made it possible for the Chemistry Department to change their program to allow students to complete the upper level core in four semesters and reduce the prerequisite structure of some electives making them more available to more students.

The department has very talented, gifted, and productive scholars and teachers.

Alumni Survey Results in the area of *Rating the Major; Graduate/professional Study plans; Current Employment status; and Educational Experience*, are very positive. For example, In the area *Rating the*

Major, 100% of the students surveyed responded positively as to the knowledge and expertise of the faculty. Likewise, 100% responded positively to faculty-student relationships, advising and availability of faculty.

Chemistry faculty continue to actively participate in the Teaching Scholars and Online Teaching Fellows programs on campus.

The addition of another faculty position has helped reduce the number of ad-hoc instructors.

A number and variety of student assessments are in place. Imbedded assessments are used to assess learning outcomes in the major. Direct observation of student performance is in place in courses and laboratories. Specifically designed rubrics are used to evaluate products produced. Two capstone products are evaluated as part of the overall program assessments. One of these is a formal research report produced by the student for the American Chemical Society. These reports become part of the Department's periodic review by the American Chemical Society.

A systematic plan to identify and provide assistance to at-risk students is tentatively planned for the current semester with limited, implemented in a few courses in fall.

Based on rubric data, the use of primary chemistry literature has been developed in the Instrumental Analysis course.

Math performance has improved through the Math 104 prerequisite for CHEM 212.

The Chemistry Department continues exploration of wireless communication for use in the introduction chemistry laboratories.

The Department continues actively soliciting extramural funds for the support of undergraduate and graduate research in chemistry and environmental science as well as active in the use of Classroom and Laboratory Modernization fund and one-time funds to address the ongoing need to maintain laboratories.

The Chemistry Department is active in the R & R portion of the FOCUS program, Majors Fair and the encouragement of one-on-one advising for all majors.

The percentage of females declaring a major in chemistry has consistently remained stable (and high) over the past five (5) years:

2009 - 44%
2010 - 41%
2011 - 38%
2012 - 46%
2013 - 49%

Concerns

While the addition of an additional faculty professor has helped, the number of hours that need to be covered by ad-hoc instructions is still a concern.

Students interested in studying chemistry at UWGB are confronted with the requirement of completing an interdisciplinary minor or second interdisciplinary major in addition to the chemistry major.

Limited funds exist for replacement of major instructional equipment, instruments, technology, computer hardware and software etc.

The drop in the number of Chemistry Minors.

Sixty-two (62) students declared Chemistry as their minor in 2009; 66 in 2010; 65 in 2011; and then dropped to 46 in 2012 and 40 in 2013.

The low number of students of color in the program.

Alumni Survey results (although only 4 respondents) in the area of Preparation: Reading skills and Listening Skills are low when compared with UWGB students in general. Of particular concern is Reading. Only 25% of the Chemistry students responding felt prepared in the area of reading skills in comparison to 73% of students overall. Fifty percent (50%) of Chemistry students responded that they were prepared in the area of listening skills versus 74% of students overall.

Recommendations/Suggestions

To alleviate the immediate concern regarding the number of hours needed for ad hoc instruction, filling the three graduate teaching assistantships is imperative.

Because the university is trying to increase enrollment and retain students, looking at the requirements of needing an interdisciplinary minor or second interdisciplinary major in order to have a chemistry major is strongly recommended.

A list of equipment needed in the next five years is shown on page 9 of the Self-study report. Specific equipment needed for the specific year could be submitted annually to officials in charge of the budget. University officials must continually invest in technology, computers, equipment etc. needed by the Chemistry Department to ensure that its students are prepared and competitive in the workplace. University, however, needs to make sure

The Chemistry Department's positive attempts at recruitment should be continued. Campus tours must include the building housing the Chemistry Department.

Examine the data in the most recent Alumni Survey data in the area of *Preparation*. Of specific concern is the area of Reading. If after examination, this, and other areas under *Preparation* is accurate, a plan needs to be made and implemented to address the concerns.

Cc: Dr. John Lyon, Chair of Chemistry
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