

## 2011-2012 Annual Program Review Chemistry 7-12

I. Name of Program: Chemistry 7-12

II. List of Annual Program Reviewers: Ron Robertson, Ph.D.  
Professor of Chemistry

### III. Program Description

Students who take the prescribed courses are eligible to become licensed (after student teaching) to teach chemistry and general science in grades 7-12. Specific introductory science course requirements include 2 semesters of general chemistry, 2 semesters of physics, 1 semester of biology, 2 semesters of geology, and 1 semester of calculus. Upper division requirements include semester courses in quantitative analysis, inorganic chemistry, organic chemistry, biochemistry, and physical chemistry. A methods course, completion of the professional education minor, and passing scores on the licensure examinations lead to teaching licensure.

### IV. Changes in Program

There have been no changes to the chemistry content side of the program in the past year. In the professional education minor, Psy 3130 (Educational Psychology) has been replaced by Educ 4400 (Theories of Learning). This was a decision of the College of Education. We have moved some courses around in the suggested four year plan to help students succeed on the content side as well as to accommodate the new secondary block.

### V. Program Strengths

This program is very broad and very strong and should lead to well qualified candidates.

### VI. Program Weaknesses

This program competes with some very popular career choices for our students. We simply don't have many students interested in teaching. Another problem is that many of our students who are interested in teaching and who might be good relating to and working with high school students are not strong academic chemistry students. Although the department would certainly welcome more candidates in the initial licensure program, we will probably not see a great increase in the near future. Most chemistry majors are pre-professional health career minded with other small fractions interested in industrial employment and graduate school. Most students interested in chemistry careers and able to handle the curriculum view the other career tracks with higher salaries as being more appealing. This continues to make recruitment into the chemistry teaching profession difficult.

### VII. Assessment of Candidates

For the first time in 4 years we were happy to see a student complete the initial licensure program, passing the chemistry content Praxis exam on the first attempt. Information compiled by the previous reviewer, Dr. Robin Reed, Chair of the Chemistry Department, and myself indicates that since the Fall 2003 only eight candidates have successfully completed this program. We also had 2 alternative licenses awarded this year. Alternative licensure has become more popular as students in their junior/senior year (or post graduate) decide to change career tracks and do not want to take valuable education courses which do require an investment of time and money.

#### VIII. Assessment of Program Operations

This is my fourth year of evaluation of the chemistry teacher education program. I spent 14 good and profitable years teaching high school chemistry, but there is a definite lack of interest in the students I see in secondary teaching. Teaching is not a major career focus of our students. Health related careers continue to predominate. Our outreach programs that generated some interest in teaching in previous years have been on the decline as the administration has emphasized research accomplishments by faculty. Faculty course loads and the number of total students have also increased. There is less and less time for faculty to acquaint our students with the joys of secondary teaching through demonstration/outreach activities in the schools.

As stated earlier the academic program itself is very strong and if completed, students should score well on the licensure exams. The one student who took the Praxis licensure exam this year did pass on the first attempt, and we did have two alternative licenses. I do not see the need for any changes in the program at this time. We do have a very strong transfer student who is working now to complete our program and should have no difficulty in obtaining licensure. Right now our goal is to graduate at least one initial licensure candidate per year. We will continue to encourage all possible candidates that come our way and especially promote secondary teaching to those moving out of a health career path.

#### IX. Summary of Proposed Changes

None at this time.

#### X. Assessment System

The present system of data collection by the education department seems to be adequate and should provide us with the necessary data to take corrective measures in the future. Since our numbers are so small, our department should try to track in greater detail any future successful candidates.