Chemistry BS

Multi-year Assessment Plan as of Oct. 2011

Program learning outcomes

1. Students will demonstrate a foundational knowledge of the principles of physical, analytical, and inorganic chemistry, including the structure of matter, fundamental chemical reactions, and the factors that regulate such processes
2. Students will demonstrate facility with basic concepts and reactions of organic and biochemistry.
3. Students will demonstrate an understanding of the basic techniques of chemical investigation and the fundamental principles and operating procedures of the major instruments used in chemical characterization and analysis
4. Students will participate in the life of the Chemistry Department by involvement in professional organizations such as the Student Affiliate of the American Chemical Society (SAACS) and/or serve in various positions of responsibility such as graders, tutors, and laboratory teaching assistants.
5. Students will develop career goals and define a path by which to achieve these goals
6. Students will gain entry to professional or graduate schools, or to science-related careers.

Program Assessment Plan

PLO	When to Assess*	What direct and indirect evidence to collect	Who will collect the evidence	How evidence will be assessed	Criteria for success	How decisions will be made
1 &2	Every year	Students will take various ACS standardized exam at the end of major course sequences and take the ETS Major Fields Test in Chemistry as part of the Chemistry Seminar course in their senior year.	The exams will be administered by the course instructors and the data will be collated by the Department Chair.	Scores on the ACS and ETS exams will be compared with those earned but chemistry majors at other institutions via the established national norms.	The overall group mean on the ACS exam will be at or above the 50th percentile and the group mean on the ETS exam and each of its subsections will be >75th percentile and at least 50% of our students will have an overall score > 60th percentile.	The Department faculty will examine the data annually and discuss the long-term trends. Since we may have only small groups taking the ETS exam each year. The data for several years will need to be aggregated before any definite conclusion can be drawn.

3	Every year	Faculty laboratory instructors will observe their lab TA's demonstrating various pieces of laboratory equipment and verify that they have an accurate understanding of its operation. Students working in the summer research program will a particularly advanced understanding of the instruments they have used. (GC, HPLC, NMR, UV-vis, GCMS, etc)	Faculty laboratory instructors and research mentors will collect the names of those students with these competences. These will be passed along to the Department Chair who will maintain the data.	Faculty laboratory instructors and research mentors will assess the level of expertise of their student TA of researcher according to a departmental developed rubric.	At least 75% of the department's graduates will achieve expert user status on at least one instrument. At least 50% of the chemistry major graduates will have worked intensely with at least one instrument in the summer undergraduate research program.	The Department faculty will examine the data annually and discuss the long-term trends.
4	Every year at the end of each semester	Club sponsors will report on club membership participation, and the lab coordinators will compile a list of, tutoring, grading, and lab TA's	A spreadsheet report will be prepared and the data will be collated by the Department Chair.	The percentage of student participation in various activities will be recorded from the spreadsheet.	At least 80% of our students will participate in one of these positions during their time at PLNU.	The Department faculty will examine the data annually and discuss the student participation trends.
5	Every semester during the academic advising period.	Students will answer a questionnaire regarding their career goals and their plan by which they plan to achieve those goals and then discuss the questionnaire with their faculty academic advisor.	Every faculty advisor will collect these data.	Individual student progress will be assessed by each faculty advisor.	100% of the students will submit a plan. This will be enforced because students will not be cleared for registration unless they submit this plan to their faculty advisors.	Individual student progress and any required intervention strategy will be decided by each faculty advisor.
6	Every 5 years	After graduation, alumni will be tracked and data regarding their postgraduate education and	These data are collected by a designated faculty member who will be a liaison with the	The percentages of students in various types of education or occupations will be	Success rates for alumni who apply for graduate or professional schools will be > 75% and the percentage of	The Department faculty will examine the data every 5 years and discuss the long-term trends. As

		profession will be recorded.	Biology/Chemistry alumni organization.	recorded and store by the Department Chair.	graduates who obtain jobs in science-related occupations within 3 years will be >70%.	an example, we regularly collect these data for presentation to external funding agencies, such as NSF, and HHMI.