

The Department of Chemistry and Biochemistry will undertake the assessment of two of its learning goals:

Learning goal 1:

Master a broad set of chemical concepts concerning the fundamentals in the basic areas of the discipline (organic, inorganic, analytical, physical and biochemistry). Students will demonstrate an understanding of structure, chemical properties, and reactions of chemicals and biomolecules.

Learning goal 2:

Demonstrate a firm foundation in the conceptual, quantitative, and computational thinking that underlies the theories and models that form the basis for reasoning about molecular systems. Students should be able to connect this theoretical understanding to the experimental methods used to test those theories and models.

These goals are addressed in lecture and laboratory courses. We will begin our assessment with the first two years of courses, in part because they have the most complete history of evaluation and in part because they have undergone recent changes that will allow comparative evaluations. The assessments will rely on qualitative analysis of data rather than the more rigorous statistical comparisons due to limitation of resources.

Assessments will be based on both internal and external standards. Internal standards will include grades on examinations that have been of comparable rigor over several years and on the quality of written reports that allow the students to articulate their knowledge of the subject matter. External standards will include subject tests from outside providers, including the ALEKS learning assessment for chemistry. External standards are not readily available for written reports, except at the highest level of performance. The gold standard for such a report is co-authorship in a peer-reviewed journal, and these will be included in a later assessment.