Assessment of Student Learning Outcomes in the Laboratory (L) General Education Requirement

Introduction:

We received 23 course portfolios for review. Our review consisted of the following:

1) Examining the percentages of students who exceeded, fulfilled, approached and failed to meet the learning objectives of the courses as submitted in the General Education Learning Outcomes Assessment Report
2) Reviewing each syllabus in order to determine whether or not the General Education Learning Outcomes were explicitly stated
3) Reviewing each syllabus to determine whether the required number of lab meetings were scheduled
4) Reviewing the narrative reflections for emergent themes

Learning Outcomes for Laboratory (L) courses:

Learning Outcome 1: Understanding of the methods scientists use to explore natural phenomena, including formulation and testing of hypotheses and the collection, analysis, and interpretations of data.

Learning Outcome 2: Knowledge of concepts and models in one of the sciences.

Observations:

In terms of learning outcomes, three courses had “failed to meet” percentages higher than 15%. For these courses, one indicated that no corrective action was necessary; one responded by implementing more training for TAs to engage students; and the third had no plan. Five of the courses conflated learning outcomes 1 and 2 and therefore did not independently assess them; one course only assessed learning outcome 1; and two courses provided no data on learning outcomes. Learning outcome 1 was typically assessed by using laboratory reports while learning outcome 2 was typically assessed by exams and quizzes.

Review of syllabi showed that all courses met the minimum number of laboratory meetings. However, 19 of the 23 courses did not have the general education learning outcomes stated.

The narrative reflections were largely summations of the data foundations and not reflective.

Strengths:

1) Courses are scheduled for the required number of laboratory meeting times
2) Assessment methods for the learning outcomes are appropriate
3) Most courses have low “failure to meet” learning outcome percentages

Weaknesses:

1) Lack of learning outcomes stated in the syllabi
Recommendations:

1) Reiterate with faculty teaching these courses that learning outcomes should be explicitly stated in the syllabus
2) UUCC follow-up with the two courses with high “failed to meet” percentages that did not present an improvement plan to assure that some action is being taken