Course Assessment in a Box, Version II

Course Assessment in a Box is a practical tool for you to conduct assessment of course Student Learning Outcomes (SLOs). By following these simple steps, using assessment tools you already use to evaluate student work, you can easily produce a course assessment of SLOs.

These steps align with the course SLO assessment page in the CurricUNET Program Review Module. Once the steps are completed, simply attach it to your Program Review.

1. Number and name of the course being assessed:
   Biot105 - Laurie Issel-Tarver - Spring 2014

2. List all the Course SLOs from the Course Outline of Record:

   The student will:
   1. Demonstrate the appropriate behaviors, teamwork, and proper safety procedures to work in a laboratory environment.
   2. Apply the correct mathematical operations to the preparation of reagents and buffers, dilutions and dilution series, pH calculations, basic statistics, and the creation of standard curves.
   3. Demonstrate an understanding of the scientific method, experimental design, data collection, maintaining a professional laboratory notebook, aseptic technique, and laboratory skills and procedures, including the preparation of reagents, buffers, and other materials.
   4. Demonstrate basic concepts and applications of biology, chemistry and biochemistry appropriate for a biotechnology laboratory, with the goal of working with instrumentation such as spectrophotometers, conductivity meters, electrophoresis equipment, autoclaves, pH meters, microscopes, incubators, and centrifuges.
   5. Describe general features of cell structure & function, how cells reproduce (mitosis & meiosis), basic concepts in Mendelian and chromosomal inheritance, and the fundamentals of molecular inheritance, including DNA structure & replication, transcription, and translation.

3. If you have had any dialogue about the Course SLOs amongst faculty who teach this course, please describe it here (leave blank if there has been no specific dialogue):
   I have had lengthy discussions with Dr. Sharma about appropriate assessment of SLOs in this class. We use consistent tools (lab practicals, exams, homework assignments, performance rubrics) for assessment.

4. List the SLO(s) you are assessing in this particular instance:
Demonstrate an understanding of the scientific method, experimental design, data collection, maintaining a professional laboratory notebook, aseptic technique, and laboratory skills and procedures, including the preparation of reagents, buffers, and other materials.

5. Describe the assessment strategy or tool that addresses the SLO(s):

I used a rubric to score the record-keeping of students, in the maintaining of a professional laboratory notebook throughout the course. This requires students to follow professional guidelines such as signing each page, signing across the edge of attached materials, initialing any errors that are crossed out, writing in pen only, keeping a table of contents up to date, voiding blank areas, writing clearly, having a title/objectives/procedures/results/analysis/conclusions for every lab.

NOTE: Try to use assessment strategies you are already using to evaluate student work as part of your grading system. Examples: Rubrics for Evaluating Projects or Assignments, Portfolio Evaluation, Culminating Projects, Final Exams, Writing Assignments, Performance Assessment, Department Testing, Pre and Post Tests, Vendor or Industry Certification Examinations, Indirect Assessments (Student Surveys, Focus Group Discussions, Interviews), or others....

6. Describe how the criteria or standards in this assessment tool link to the SLO(s) being assessed:

The SLO includes maintaining a professional laboratory notebook.

7. By looking holistically at the results from all students, describe your findings:

There were 13A’s, 2B’s, 1C and 1D on the overall notebook grade as scored by rubric at the end of the class. That means that 16/17 were doing an adequate job of maintaining a professional notebook, and 13/17 were doing quite well. When the notebook grade is compared to the overall grade in the class, I found they were mostly consistent, with a few glaring exceptions – for example, one student kept an excellent (A) notebook but received an F in the class, as she was not able to master the material beyond hands-on labwork and record keeping. The notebook grade is 20% of the overall grade for the class, and some students barely pass the class but do manage to pass because of a high notebook grade that pulls up their poor exam grades. The faculty in the department have mixed feelings about this. We are working with a group of biotech faculty in the Bay Area to develop mastery tests that a student must pass in order to pass the class. These should include mastery of basic calculations and theory as well as hands-on activities; that may help us to balance our priorities with the different SLOs.

8. Describe faculty dialogue (if any) involved in the assessment process:
9. Based on an analysis of your findings and dialogue, describe revisions (if any) in curriculum or teaching strategies implemented to promote student success:

Assessment of notebooks is well-developed; I think we’ll in the next phase focus on development of assessment tests for other aspects of this SLO, and other SLOs.

10. After the improvements are implemented, describe the results: