

Campus Assessment of Student Learning Outcomes

Unit Name: Department of Biology Assessment Summary Fall 2007-Spring 2008

Due September 2008

Chair: Dr. Spencer Cortwright

Describe the assessment plan and procedures currently in place in your unit, noting the specific outcomes measured, measurement tools used, and parties responsible for collection, analysis, and action.

Note: include the full 'loop' of assessment from student learning outcome through targets for improvement and change.

The Department of Biology has four primary student learning outcomes for our Majors

Students will obtain a firm foundation and advanced study in all important sub-fields of biology.

Students will learn critical evaluation of new scientific results and incorporate key findings into their base of knowledge.

Students will conceive and perform biological experiments that include data collection, data analysis and interpretation, and synthesis of findings.

Students will learn effective communication via scientific writing of research reports, essay exams, and grants.

We assess these goals in the following ways.

Capstone Course – This is a generally small, senior-level course that requires students to demonstrate in-depth scientific achievement. Students must master reading and comprehension of primary literature in preparation for tests, must write a detailed paper focusing on use of primary literature, and must make connections among a wide variety of sub-fields in Biology on tests. Because of the small size of the class, student achievement on these counts is readily monitored and course goals are adjusted.

Upper-Level Exams – Each course features exams using a variety of short answer and essay questions that address student skills in the four outcomes.

Senior Seminar – This seminar varies from one semester to another, but either requires students to prepare a grant proposal or present an oral presentation of a primary research.

GPA & Standardized Test Scores – We ask students to volunteer information on their professional test scores (e.g. MCAT, DAT, GRE, etc.), which we compare to GPA. We seek a positive correlation between the two and over the past 15 years have been pleased with the correlation. However, we need to be more thorough in this record-keeping.

The Department also serves Nursing and Allied Health students. We frequently discuss how students are performing in these classes with the goal of identifying any needed adjustments to the curriculum. For example, in our Anatomy & Physiology courses we keep close track of DWF rates and institute course changes as perceived necessary. Addition of Discussion sections is one way we have modified our anatomy and physiology courses.

Chart / describe the data collection, analysis, and reporting cycles in you unit assessment plan.

Assessment Activity	Method	Responsible Party	Timetable
Evaluation of Theoretical Concepts, per dept. student learning goals	In-depth short answer or essay tests, research papers, laboratory exercises with lab reports, capstone projects/papers	Dept. Chair and full-time faculty work together.	Assessment Data collected in the Spring. Assessment Data Analysis Ongoing
Evaluation of Applied Concepts, per dept. student learning goals	Some course projects have applied applications. Students earn Internships, discussions with students	Dept. Chair and full-time faculty work together.	Same as above.
Evaluation of Research and Analytical Skills per dept. student learning goals	Laboratory and field exercises, independent research projects, both of which require written scientific papers and/or scientific presentations.	Dept. Chair and full-time faculty work together.	Same as above.
Evaluation of Critical Evaluation of Biological Research, per dept. student learning goals	Capstone course requires intensive critical analysis of primary literature research on exams and research papers.	Faculty of Capstone Course in conjunction with Chair	Same as above.
1-2 New Improvement Target Areas suggested for next yr. – Congruent with Dept., Gen Ed. & Campus Student Learning Outcomes	Dept. Faculty Meetings feature multifaceted discussions of way our curriculum can succeed. For example, we are instituting a “quiz” of basic scientific knowledge a student should have when starting Biol L101. Any score less than 60%, we will urge students to take a nonmajors prep course	Dept. Chair and full-time faculty work together.	New Improvement Areas Identified in the Spring

	prior to initiating majors course. This we expect will reduce the DWF rate.		
--	---	--	--

Due no Later than April 24, 2009 - Report on Assessment Results

In one brief paragraph, indicate the data you collected and the results (what specifically did your assessment yield for the things you worked to improve?)

We will interpret our DWF rate for L101 for Fall 2008 and Spring 2009 to see if our screening quiz for L101 moves underprepared students to L100 for preparation to enter L101 and results in a lower DWF rate for L101 and higher percentage of students moving on to L102. Also, it is apparent that we need to ensure that students in our capstone course must show satisfactory achievement on all important goals of the course. For example, if a student satisfactorily integrates new scientific knowledge on exams, but does not adequately perform on written work (e.g. lab reports, library research paper), then they can earn a passing grade in the class, but an unsatisfactory grade on the intensive writing component (graded S/F). We deeply discussed how well our labs are equipped and have discussed at great length how we should allocate funds to improve all our labs. Because of a one-time reallocation of funds from one year of unfilled faculty line, we have been able to spend more money than usual in improving labs (\$85,000 this year vs. \$20,000 other years). Starting this year, we will be better able to judge improvement in labs. For Anatomy & Physiology courses, we decided to put exams in discussion sections in order to free up lecture time for more review and better pacing of material in general. Lastly, students are continually taking professional exams, so we query students about scores and correlate them to GPA.