

Program Assessment Plan

Department Name: Biology
Major: BS BIOLOGY

Student Learning Goals:

1.	Learn and apply the scientific method of analysis.
2.	Gain strong knowledge base of biologically-related facts and theory
3.	Develop Strong oral and written communication skills and the ability to locate and make use of scientific information in the library
4.	Develop strong problem solving skills, especially in a team situation.
5.	Develop strong quantitative and technical skills, including data analysis, graphing, use of instrumentation, field techniques, etc.
6.	Develop strong analytic skills so as to be able to critically assess data and ideas that are found, for example, in the scientific literature
7.	Develop strong observational and pattern-recognition skills
8.	Gain the true understanding of biological phenomena that can only be attained by experiencing those phenomena in the teaching lab or, better yet, by participating in original research projects
9.	Become a biologically literate citizenry able to apply understanding to everyday societal controversies and to inform/teach fellow citizens.
10.	Progress through the degree program in a prompt way and to understand post-graduate career and educational opportunities.

Assessment Plan:

Assessment Measure:	Goals Addressed: (list by number)	How is the information used?
Direct Measures		
a) Success of pre-professional students: acceptance %.	2, 3, 4, 5, 6, 7, 8	Used to determine if our curriculum is of sufficient rigor to do an excellent job of preparing our students. If we were to have a drop in success rate, we'd immediately discuss then institute changes in our program to remedy any problems.
b) Standardized test: ETS major fields test given to all graduating seniors	2	Used to determine if our coursework is appropriately comprehensive. If problems were found we would adjust curriculum and course subject matter. Also used to determine if there are individual students who fail to master material but are able to pass courses anyway. If this became apparent, then we'd need to modify our grading procedures so as to ensure that students who pass our classes have, in fact, mastered the material.
c) Letters, emails, discussion with alumni	1, 2, 3, 4, 5, 6, 7, 8, 9, 10	Used to assess effectiveness of our curriculum at preparing students for professional school, graduate school, and other professions. Were we to discover that our alumni were being unsuccessful at gaining employment and at making it through professional school; we'd take actions to remedy the situation.
d) Performance in downstream coursework	2, 3	If faculty members find that students are not performing well in downstream courses, then plans are formulated and actions taken to strengthen or otherwise modify the upstream courses. This sort of information allows us to assess the positive or negative impact on the program of changes in our curriculum.

Assessment Measure:	Goals Addressed: (list by number)	How is the information used?
e) Assessment by instructors of quality of oral and written communication	1, 2, 3, 4, 5, 6	Faculty members informally and qualitatively assess quality. If problems are apparent, then we'd discuss and implement changes to course content and/or methodology.
f) Number of students participating in internships off campus and in faculty labs	8	Informally and qualitatively measured to assess program success at giving undergraduates a research lab experience. If participation were found to be low, then we'd figure out ways to create additional opportunities and to facilitate their use. For example, at the recent Undergraduate Research Conference, a lower proportion of Biology majors participated than the proportion for Chemistry, Physics, and Engineering. We are now contemplating ways to raise our proportion.
g) Test and quizzes in biology courses	1, 2, 4, 5, 6, 8	Used to assess teaching methods so that we can adjust those methods, as necessary, to better cover information that we have determined that students have not mastered. Employed by all faculty members on a continuing basis.
h) Term papers and other class projects	1, 2, 3, 4, 5, 6, 7, 8,	Used to adjust adequacy of coursework developing communication skills, Used to assess whether our coursework has given students the ability to carry out scientific study: design, perform, analyze, discuss, and understand. Employed by most (if not all) faculty members on a continuing basis.
i) Anecdotal evidence of acceptance to graduate schools and/or gaining employment in a biological profession	10	Information gathered informally on an ongoing basis. If we were to become aware of major problems in the success of our students in gaining admittance to graduate school or at securing employment, we'd develop and implement strategies to modify our program to better prepare our students.
j) Qualitative assessment of work quality of our alumni employed by faculty members and/or alumni who become our graduate students.	1, 2, 3, 4, 5, 6, 7, 8	Employed on an ongoing basis by nearly all faculty members; there's really no better way to assess the skill set of our students than to have them working in our labs. If it is found that skills are systematically lacking, then we'd develop and implement modifications to our program to better prepare our students.
k) Informal assessment of student success at advancing through program.	10	Employed on an informal and continuing basis by all advisors and by the department chair. If we become aware of problems that are common to a number of students, then we make adjustments to our program, such as adjusting the frequency of course offerings or adjusting advising strategy. For example, it was found that offering our biology upper division core classes only once per year was causing problems with a number of students; we therefore are now offering all upper division biology core classes (BIOL 301, 323, 343, 401) every semester even though it takes resources that really don't exist.

Assessment Measure:	Goals Addressed: (list by number)	How is the information used?
Indirect Measures		
l) Opinions regarding student performance and ability from employers, graduate advisors, off-campus internship advisors, professional school admissions personnel, faculty in other departments	1, 2, 3, 4, 5, 6,	Assessed informally and qualitatively on a continuing basis. Used to assess success of the coursework of our program at preparing students for the next step. Assessment not performed in a systematic way.
m) Student evaluations of instructors and teaching assistants in biology courses; equipment and facilities are often commented upon.	1, 2, 3, 4, 5, 6, 7, 8	Chair reads every evaluation from every instructor, looking for systematic problems. When problems are noticed, the chair requests changes of teaching methods as necessary, and may reassign teaching assistants to other courses as appropriate.
n) Evaluation of external reviewers during dept program review	1 though 10 in general terms	Broad application to nearly every aspect of our program. All concerns are considered and are addressed as possible.
o) Letters, emails, discussion with graduated students	1, 2, 3, 4, 5, 6, 7, 8, 9, 10	Data collected in a very informal manner; nothing systematic. Used to assess effectiveness of our program's curriculum at preparing students for professional school, graduate school, and other professions. If we were to hear from our students of problems with our program, we'd make modifications.
p) Written alumni exit questionnaire	3, 4, 5, 6, 9, 10	Given to graduating seniors every semester. Series of questions used to assess the effectiveness of our program in implementing the goals listed above. Information is used to redesign curriculum, to modify advising regime, to reassign teachers or teaching assistants.
r) Alumni surveys by Office of Institutional Assessment	3, 4, 6,	Given occasionally by OIA. Used to redesign curriculum: Add or subtract coursework requirements, add or subtract emphasis within courses.

Updated: January 28, 2006