Program Learning Goals Assessment Activity Report Due April 21, 2017 to the Office of Academic Planning

Program Learning Goals template Resources about writing measurable program learning objectives/goal/outcomes can be found on: http://air.sfsu.edu/assessment/resources

Program Learning Goals Rubric - developed and used by the University Academic Assessment Advisory Committee (UAAAC) to provide feedback to programs about their program learning goals.

Learning objectives should reflect the program’s distinct mission in connection with the university’s broader educational goals, as well as aligning with the individual courses in which they are addressed. They should allow faculty to communicate their expectations, students to reflect on their own growth, and programs to measure and improve their educational results.

<table>
<thead>
<tr>
<th>DEVELOPED</th>
<th>DEVELOPING</th>
<th>NEEDS DEVELOPMENT</th>
<th>ABSENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning goals are clear and can be accurately assessed</td>
<td>Learning goals are mostly clear; some can be assessed</td>
<td>Learning goals are present but vague; unclear how an evaluator could determine whether goals met</td>
<td>Program learning goals are absent or incomplete</td>
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Department: BIOLOGY

College: College of Science and Engineering

1. List your most recent program learning goals prior to any revisions.

The following student learning outcomes were proposed in Spring 2013 as part of a departmental review.

Core Concepts
1. EVOLUTION: Evaluate accuracy of assertions about evolution.
2. STRUCTURE AND FUNCTION: Provide two examples of the relationship between a biological structure and its biological function.
3. INFORMATION FLOW: Diagram the flow of information from a gene to a trait.
4. TRANSFORMATIONS OF MATTER AND ENERGY: Determine the origins of and trace the flow of matter and energy in living systems.
5. BIOLOGICAL SYSTEMS: Predict the outcome of perturbing a physiological system.

Core Competencies
1. APPLY THE PROCESS OF SCIENCE: Design and conduct an experiment to test their own hypothesis.
2. APPLY QUANTITATIVE REASONING: Draw conclusions about a biological system from data displayed on a table or graph.
3. COMMUNICATE: Demonstrate the ability to communicate biological information in a written and oral format.
2. Please describe the process of revising your program learning goals this semester. How were department faculty members involved? Were the revised learning goals developed in department meetings or other gatherings?

The process of revising our student learning outcomes was initiated within the Department’s curriculum committee using the NSF Vision and Change proposal as a guide. We convened a departmental workshop that included both tenure track and non-tenure track faculty. Within the workshop, faculty discussed and described the SLOs of their courses with one another and also filled out a workshop describing these learning outcomes. The responses were aggregated and posted in an online survey where they could be ranked by faculty in terms of how important they thought it was for students to master the specific learning outcomes. The results of the survey were then presented in faculty meeting and will be discussed further in the Fall 2017 semester to finalize them.

3. What informed your decision to revise your learning goals (e.g. changes in the profession, new focus of the department, outcome of assessment)?

The Biology Department is beginning to revise the structure of the major concentrations to improve student success rates and decrease the time to graduation. The revised learning outcomes would help guide Departmental decisions regarding which courses should and should not be part of the revised major concentrations.

4. What are you new program learning goals?

The following are still subject to further discussion in Fall 2017 but the tone of the initial discussion suggests that they will not change substantially.

Core Competencies

1. UNDERSTANDING THE PROCESS OF SCIENCE: Students will demonstrate how a theory is supported or can be rejected based on data from experiments.
2. QUANTITATIVE REASONING: Students will be able to create graphs and perform simple statistical tests to determine whether or not differences between groups are significant.
3. RELATIONSHIP BETWEEN SCIENCE AND SOCIETY: Students will be able to explain a biological process or phenomenon as it relates to a societal issue.

Core Concepts

1. EVOLUTION: Students will be able to understand the fundamental concepts of evolution, role of selective pressures, how genes change
2. RELATIONSHIP BETWEEN STRUCTURE AND FUNCTION: Students will be able to describe how variation in the structure of an organ in a plant or animal contributes to variation in its function
3. INFORMATION FLOW AND STORAGE: Students will be able to explain the transmission of heritable traits

Give that this year you have revised your program learning goals, the next step would be to assess one of them in the 2017-18 academic year and complete the Assessment Findings Report. Please let the Associate Dean of Academic Planning know if that is not the case. Thank you!

Assuming we approve these student learning outcomes early in Fall 2017, then I anticipate we will be able to choose one to assess.