

Student Learning Summary Form AY2015-16

Due to your dean by June 1

Due from dean to assessment office by June 15

Degree Program Name: Biology & Biology w MLS

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Before you complete the form below, review your outcomes library and curriculum map to ensure that they are accurate and up to date. If not, you may submit a new version along with this summary.

Part One

a. What learning outcomes did you assess this year?	b. (1) method(s) uses to determine how well your students attained the SLO? (2) In what course or other required experience did the assessment occur?	c. What expectations did you establish for achievement of the outcome?	d. What were the actual results?	e. (1) Who is responsible for collecting & analyzing the results? (2) How shared with program's faculty?
SLO #1. Explain & illustrate fundamental concepts in Biology (for AY15-16 PLAN)	Administered national test – the Biology Major's Exit exam (from ETS). Test has both analytical and experimental & problem solving design in addition to mere content. Test was optional, in 2 sittings (Apr'15, Apr '16) to get maximum possible number of students. Some students received extra credit (in Bio 374 or Bio 330).	1.Student must obtain average score at or above the national average. 2.Student must obtain sub-scores at or above 50 percentile.	Based on a partial analysis of results (n=19 students) from first set of exams Spring '15: <ul style="list-style-type: none"> • Average of each of the 4 sub-scores numerically are below national means (& medians) but each are within one standard deviation • Molecular biology sub-scores highest of the four. This sub-score had been the lowest when we used ETS test in 2006, and was a subsequent focus. 	1.D. Hews & J. O'Keefe. 2.The intermediate results were briefly discussed at a faculty meeting. Final results remain to be collated (second set of scores from ETS are pending), analyzed and presented to faculty.
SLO #3. Scientific communication and literacy (for AY 14-15 PLAN)	1. Used term paper Rubric to evaluate writing assignments. 2. Bio 461, 426, 428, 491 (upper-division electives).	Plan lacks benchmark; This exercise allows us to establish a benchmark.	<ul style="list-style-type: none"> • Rubrics obtained from Faculty instructors end of SP16. • Collation & Analysis scheduled for this summer (2016). • Difficulty of collecting artifacts from Seniors suggests we need to require writing in upper-division elective courses and use of a standardized rubric. 	Undergraduate Affairs Committee (<i>Dannelly, Mitchell, O'Keefe, Patterson, Schwab</i>).

Notes

- a.** Use your outcomes library as a reference.;
- b.** Each outcome must be assessed by at least one direct measure (project, practica, exam, performance, etc.). If students are required to pass an examination to practice in the field, this exam must be included as one of the measures. At least one of the outcomes must use an indirect measure (exit interview, focus group, survey, etc.). Use your curriculum map to correlate outcomes to courses. **(BIOLOGY NOTE: we were unaware of this requirement. Will revise Plan to include an indirect measure.**

Part Two

In no more than one page, summarize 1) the discoveries assessment has enabled you to make about your students' learning, the curriculum, departmental processes, and/or the assessment plan itself; 2) the changes and improvements you have made or will make in response to these discoveries and/or the coordinator's feedback on the previous summary; and 3) what your assessment plan will focus on in the coming year.

SLO 1 – Assessing Content.

1. A. Composition of test-takers. We used *ETS Major Field Test-Biology*. This Biology test in 2015 was used by 360 other institutions in the US and comparisons are based on over 9,000 student test-takers. We administered the test to 17 volunteer senior Biology Majors, in April 2015, and to another 5 volunteer senior Biology Major in April 2016. Only data from the larger April 2015 subset are available for analysis. We think a fairly broad range of students took the test received extra credit and some students were high-achieving students (e.g. pre-medicine students) interested in the test.
B. Discoveries. – DATA note: Two students were excluded from the 19 test results. They were extreme outliers and other evidence may explain the poor scores: both were international students, and their written quizzes and tests indicate language comprehension or reading problems.

i) We were below, but within one standard deviation of, the national median score for each of the four subscores.

	Scaled Score max 200	National Percentile Rank overall	S1. Cell Biology subscore	S2. Molecular Genetics subscore	S3. Organismal Biology subscore	S4. Pop Biol, Ecol & Evol subscore	N
ISU Biology mean	148.2	35.06	47.4	50.5	49.5	46.8	17 students
ISU St Dev	7.6		6.4	10.2	7.3	10.1	
Natl Mean	152.3		52.4	52.3	52.5	51.5	360 institutions,
Natl Std dev	7.9		6.8	7.1	7.5	7.5	9,273 students

- ii) Molecular Genetics was our lowest subscore in 2006 when we last administered this test. In this 2015 sample this subscore was numerically the highest. This indicates we succeeded in our focus on increasing molecular genetics competency in the core courses.
- iii) Our lowest two subscores in the 2015 subsample are S4. Population Biology, Ecology and Evolution and S1 Cell Biology.
- iv) When entire data set is compiled, we will also compare these results to other indicators, such as overall ISU GPA, and grades in key courses (Bio 101, 102, 330,350,374,380) and MAPLE scores.

C. Changes we will make. We will discuss all results at our August 2016 Biology Faculty Retreat. We have discussed some changes, such as finishing proposed curriculum changes (requiring BIO 490 of seniors, so taking the ETS test is a required event for a grad in the course; integrating biomedical and molecular and mathematical topics into Population bio and ecology and evolution content, so the large portion of our major, premedical students, will better-understand and appreciate the connections of those sub-disciplines to the biomedical field).

SLO 3 - Scientific communication and literacy

1. We collected rubrics and/or artifacts obtained from Faculty instructors end of FA15 and SP16 (and we have a pile of artifacts from 2014, but rubrics were not applied by the instructor). Collation & Analysis scheduled for this summer (2016).
2. Difficulty of collecting artifacts from Seniors suggests we need to require writing in upper-division elective courses and use a standardized rubric that is to be applied by the Instructor when doing the original grading or along-side the instructor's personal evaluation/grading.
3. An online portfolio approach might be useful to collect artifacts demonstrating public presentations (e.g., research posters, class Powerpoint presentations, etc.).

Student Learning Summary Report Rubric :: Office of Assessment & Accreditation :: Indiana State University

Degree Program: BS in Biology Date: 8.16.16

	Level 0 – Undeveloped	Level 1 – Developing	Level 2 – Mature	Level 3 – Exemplary
<p>1. Student Learning Outcomes</p>	<p><input type="checkbox"/> No outcomes were identified.</p> <p><input type="checkbox"/> No Curriculum Map was provided.</p>	<p><input type="checkbox"/> Outcomes were identified.</p> <p><input type="checkbox"/> Some of the outcomes are specific, measurable, student-centered, program-level outcomes.</p> <p><input checked="" type="checkbox"/> A Curriculum Map was provided.</p>	<p><input type="checkbox"/> Outcomes are specific, measurable, student-centered, program-level outcomes. One was.</p> <p><input checked="" type="checkbox"/> Outcomes at least indirectly support Foundational Studies Learning Outcomes or the Graduate Learning Goals.</p> <p><input type="checkbox"/> The Curriculum Map identifies where/to what extent each outcome is addressed.</p> <p><input checked="" type="checkbox"/> At least one outcome was assessed in this cycle.</p>	<p><input type="checkbox"/> Outcomes are specific, measurable, student-centered program-level outcomes that span multiple learning domains.</p> <p><input type="checkbox"/> Outcomes directly integrate with Foundational Studies Learning Outcomes or the Graduate Learning Goals.</p> <p><input type="checkbox"/> Outcomes reflect the most important results of program completion (as established by an accreditor or other professional organization).</p> <p><input type="checkbox"/> Learning outcomes are consistent across different modes of delivery (face-to-face and online.)</p> <p><input type="checkbox"/> Outcomes are regularly reviewed (and revised, if necessary) by the faculty and other stakeholders.</p> <p><input type="checkbox"/> The Curriculum Map identifies where/to what extent each outcome is addressed and offers evidence that students have sufficient opportunity to master the associated learning outcomes.</p>

				<input type="checkbox"/> Two or more outcomes were assessed in this cycle.
2. Measures & Performance Goals	<input type="checkbox"/> No measures are provided. <input type="checkbox"/> No goals for student performance are identified.	<input type="checkbox"/> Measures are provided, but some are vague and/or do not clearly assess the associated outcomes. <input type="checkbox"/> Measures are primarily indirect. <input type="checkbox"/> Measures include course and/or assignment grades, but there is no evidence that grades are calibrated to the outcomes. <input type="checkbox"/> Performance goals are identified, but they are unclear or inappropriate.	<input checked="" type="checkbox"/> At least one direct measure was provided for each outcome. <input checked="" type="checkbox"/> Some information is provided to suggest that measures are appropriate to the outcomes being assessed. <input type="checkbox"/> Measures include course and/or assignment grades, and general information is provided to indicate that grades are calibrated to the outcomes. <input checked="" type="checkbox"/> Clear and appropriate standards for performance are identified. For #1 <input type="checkbox"/> Mechanisms (rubrics, checklists, criterion-referenced exams, etc.) were provided.	<input type="checkbox"/> Multiple measures were provided, and a majority are direct. <input type="checkbox"/> Detailed information is provided to show that measures are appropriate to the outcomes being assessed. <input type="checkbox"/> Measures include course and/or assignment grades, and specific evidence is provided to demonstrate that grades are calibrated to the outcomes. <input type="checkbox"/> Clear and appropriate standards for performance are identified and justified. <input type="checkbox"/> If students are required to pass a certification or licensure exam to practice in the field, this was included as a measure. <input type="checkbox"/> Measures assess some high impact practices (internships, capstone course projects, undergraduate research, etc.) <input type="checkbox"/> Some measures allow performance to be gauged over time, not just in a single course. <input type="checkbox"/> Mechanisms (rubrics, checklists, criterion-referenced exams, etc.) were provided that

				<p>demonstrate that the measure provides clear evidence of what students know/can do.</p> <p><input type="checkbox"/> If a measure is used to assess more than one outcome, a clear explanation is offered to substantiate how this is effective.</p>
3. Results	<p><input type="checkbox"/> No data are being collected.</p> <p><input type="checkbox"/> No information is provided about the data collection process.</p> <p><input type="checkbox"/> No results are provided.</p> <p><input type="checkbox"/> Students are meeting few of the performance standards set for them.</p>	<p><input checked="" type="checkbox"/> Some data are being collected and analyzed.</p> <p><input checked="" type="checkbox"/> Some results are provided.</p> <p><input type="checkbox"/> Insufficient information is offered to demonstrate that data collection, analysis, and interpretation processes are valid.</p> <p><input type="checkbox"/> Students are achieving some of the performance standards expected of them. ?</p>	<p><input type="checkbox"/> Data are being collected and analyzed.</p> <p><input type="checkbox"/> Results are provided.</p> <p><input checked="" type="checkbox"/> Some information is offered to demonstrate that data collection, analysis, and interpretation processes are valid and meaningful.</p> <p><input type="checkbox"/> Students generally are achieving the performance standards expected of them.</p>	<p><input type="checkbox"/> Clear, specific, and complete details about data collection, analysis, and interpretation of results are provided to demonstrate the validity and usefulness of the assessment process.</p> <p><input type="checkbox"/> Students generally are achieving the performance standards expected of them and demonstrate continuous improvement on standards they have yet to achieve/achieve less well.</p> <p><input type="checkbox"/> If students are required to pass a certification or licensure exam to practice in the field, the pass rate meets the established benchmark.</p>
4. Engagement & Improvement	<p><input type="checkbox"/> No one is assigned responsibility for assessing individual measures.</p> <p><input type="checkbox"/> Assessment primarily is the responsibility of the program chair.</p> <p><input type="checkbox"/> No improvements</p>	<p><input type="checkbox"/> The same faculty member is responsible for collecting and analyzing most/all assessment results.</p> <p><input type="checkbox"/> It is not clear that results are shared with the faculty as a whole on a regular basis.</p>	<p><input checked="" type="checkbox"/> Multiple faculty members are engaged in collecting and analyzing results.</p> <p><input type="checkbox"/> Results regularly are shared with the faculty. <i>Will be?</i></p> <p><input type="checkbox"/> The faculty regularly engages in meaningful discussions about</p>	<p><input type="checkbox"/> All program faculty members are engaged in collecting and analyzing results.</p> <p><input type="checkbox"/> Faculty regularly and specifically reflect on students' recent achievement of performance standards and implement plans to adjust</p>

	<p>(planned or actual) are identified.</p> <p><input type="checkbox"/> No reflection is offered about previous results or plans.</p>	<p><input type="checkbox"/> Plans for improvement are provided, but they are not specific and/or do not clearly connect to the results.</p> <p><input type="checkbox"/> Little reflection is offered about previous results or plans.</p>	<p>the results of assessment. Will do so?</p> <p><input checked="" type="checkbox"/> These discussions lead to the development of specific, relevant plans for improvement.</p> <p><input checked="" type="checkbox"/> Improvements in student learning have occurred as the result of assessment.</p>	<p>activities, performance goals, outcomes, etc. according to established timelines.</p> <p><input type="checkbox"/> Faculty and other important stakeholders reflect on the history and impact of previous plans, actions, and results, and participate in the development of recommendations for improvement.</p> <p><input type="checkbox"/> Continuous improvement in student learning occurs as the result of assessment.</p> <p><input type="checkbox"/> Outcomes and results are easily accessible to stakeholders on/from the program website.</p> <p><input type="checkbox"/> Assessment is integrated with teaching and learning.</p>
Overall Rating	<input type="checkbox"/> Level 0 – Undeveloped	<input checked="" type="checkbox"/> Level 1 - Developing	<input type="checkbox"/> Level 2 – Mature	<input type="checkbox"/> Level 3 – Exemplary

COMMENTS

Strengths, Concerns, Recommendations for Improvement

1. Learning Outcomes

One outcome is specific and measurable; the other (#3) is not an outcome but a general category of learning. Your Curriculum Map is not complete, by the way: It does not identify where/the extent to which the outcomes are addressed.

2. Measures & Performance Goals

Two direct measures were planned for this cycle, the Major Field Test and a term paper. The exam clearly assesses its related outcome. Since you do not yet have data about the communication-related outcome, please add it/an analysis of it to next year's report. Include the actual rubric in the college's Blackboard site, too.

3. Results

Results were well detailed for the Major Field Test and show improvement in one sub-score, though students did not meet the overall benchmark. I look forward to learning more about the results of your communication assessment work in next year's report.

4. Engagement & Improvement

Multiple faculty members are involved in collecting and analyzing assessment information, and though little conversation with the faculty as a whole has occurred yet, the program has identified areas for improvement related to the test results. You hint at the possibility that these results may not be representative (since participants were volunteers), and I think you are right to consider making the exam a requirement—if you can afford to do so. Using a common rubric is a good idea, too. The AAC&U's written communication rubric has become the standard tool at universities, but it is complicated. Let me know if I can help you develop a simple, useful tool.

Thanks for providing this information about your student learning assessment program!