

## Degree Program Student Learning Report (rev. 7/14)

Fall 2015 – Spring 2016

The Department of Biology in the School of Arts and Sciences

# Biological Sciences, A.S.

Effectively assessing a degree program should address a number of factors:

- 1) Valid student learning outcomes should be clearly articulated;
- 2) Valid assessment measures should be used, consistent with the standards of professional practice;
- 3) There should be evidence that assessment data are being used by faculty to make necessary instructional or assessment changes; and there should be evidence that instructional or assessment changes are being implemented to improve student learning.

### PART 1 (A & B)

#### Relationship of Degree Program Learning Outcomes to Departmental and University Missions

A. Clearly state the school, department and degree program missions.

University Mission	School Mission	Department Mission	Degree Program Mission
Our mission is to ensure students develop the skills and knowledge required to achieve professional and personal goals in dynamic local and global communities.	Central to the mission of the School is the preparation of students to achieve professional and personal goals in their respective disciplines and to enable their success in dynamic local and global communities. Three departments comprise this School, the Departments of	The mission of the Department of Biology at Rogers State University is to support students in their pursuit of knowledge in biology and life science.	The Associate of Science in Biological Science consists of the general education curriculum and the supporting science courses. In support of the mission of the University, the school, and the department, the degree seeks to develop a student with a broad and diverse background in science

University Mission	School Mission	Department Mission	Degree Program Mission
	<p>Biology, Health Science, and Math and Physical Science. These departments pledge to deliver existing and newly developed programs that meet student demands, and to be responsive to the evolving culture of academia in general and the sciences in particular.</p> <p>Our Strategy is to foster an academic setting of diverse curricula that inherently incorporates an environment of service and collegiality.</p>		and general education.

- B. Clearly state school purposes, department purposes and degree program student learning outcomes. Align student learning outcomes with their appropriate school and department purposes, and these outcomes and purposes with their appropriate university commitments.

University Commitments	School Purposes	Department Purposes	Student Learning Outcomes
To provide quality associate, baccalaureate, and graduate degree opportunities and educational experiences which foster student excellence in oral and written communications, scientific reasoning and critical and creative thinking.	The <b>Curriculum</b> utilizes academically rigorous methodologies delivered by a quality faculty who possess a broad base of content knowledge and promote the acquisition, application and discussion of current subject matter. The School uses effective instructional techniques, empirical and evidenced-based inquiry, innovative technology, and a variety of learning environments for the purpose of enhancing student learning	<p>To increase the student's critical thinking and reasoning abilities.</p> <p>To prepare a student to matriculate into a four-year degree program in math or science related fields or graduate</p>	<ol style="list-style-type: none"> <li>1. Demonstrate an understanding of general cellular processes.</li> <li>2. Apply understanding of the taxonomy, morphology, and physiology of the Animal and Plant Kingdoms.</li> <li>3. Demonstrate an understanding of the atom, compounds, matter, gases, solutions, atomic theory, bonding chemical reactions, and chemical kinetics.</li> </ol>
To promote an atmosphere of academic and intellectual freedom and respect for	The School promotes a challenging, positive, and inquisitive Collegial	Demonstrate knowledge about the components and requirements of a safe	4. Demonstrate knowledge about the components and requirements of a

University Commitments	School Purposes	Department Purposes	Student Learning Outcomes
diverse expression in an environment of physical safety that is supportive of teaching and learning.	environment of high ethical standards and of frequent interactions between faculty and students to foster independent thought and the collegial exchange of ideas	lab environment  To promote a positive learning environment in our classrooms and on campus.	safe lab environment.
To provide a general liberal arts education that supports specialized academic program sand prepares students for lifelong learning and service in a diverse society.	The School recognizes the importance of scientific literacy in general education and its contribution to the liberal studies curriculum of the university.	To increase the student's understanding and appreciation of the biological world, and his/her ability to apply this understanding to his/her personal and professional life.  To increase the student's ability to interpret and understand his/her world.	
To provide students with a diverse, innovative faculty dedicated to excellence in teaching, scholarly pursuits and continuous improvement of programs.			
To provide university-wide student services, activities and resources that complement academic programs.			
To support and strengthen student, faculty and administrative structures that promote shared governance of the institution.			
To promote and encourage student, faculty, staff and community interaction in a positive academic climate that creates opportunities for cultural, intellectual and personal enrichment for the University and the communities it serves.	Our commitment to Service enhances the public welfare and economic development potential of our region by cultivating strategic partnerships with health and science-related industries, secondary and higher education institutions, and through active participation and leadership in civic and professional organizations by our faculty and students. These collaborative efforts are based on the belief that through shared relationships, service reinforces and strengthens learning, and learning	To increase the student's awareness of the benefits of incorporation of technology into science studies.  To serve as a resource for the community; utilizing the expertise of the faculty.	

University Commitments	School Purposes	Department Purposes	Student Learning Outcomes
	reinforces and strengthens service. An emphasis of service encourages social awareness and responsibility among faculty and students.		

**PART 2**

**Discussion of Instructional Changes Resulting from 2014-2015 Degree Program Student Learning Report**

List and discuss all instructional or assessment changes proposed in Part 5 of last year's Degree Program Student Learning Report, whether implemented or not. Any other changes or assessment activities from last year, but not mentioned in last year's report, should be discussed here as well. Emphasis should be placed on student learning and considerations such as course improvements, the assessment process, and the budget. If no changes were planned or implemented, simply state "No changes were planned or implemented."

Instructional or Assessment Changes	Changes Implemented (Y/N)	Impact of Changes on Degree Program Curriculum or Budget
Within the next SLR cycle with the change to Jenzabar each lab instructor teaching the General Cellular Biology Labs will have their own shell and at that point we will add an on-line quiz to assess student's about safety in the laboratory.	Y	No Impact on budget or Curriculum

**PART 3**

**Discussion About the University Assessment Committee's 2014-2015 Peer Review Report**

The University Assessment Committee in its Degree Program Peer Review Report provided feedback and recommendations for improvement in assessment. List or accurately summarize all feedback and recommendations from the committee, and state whether they were implemented or will be implemented at a future date. If they were not or will not be implemented, please explain why. If no changes were recommended last year, simply state "No changes were recommended."

<b>Feedback and Recommended Changes from the University Assessment Committee</b>	<b>Suggestions Implemented (Y/N)</b>	<b>Changes that Were or Will Be Implemented, or Rationale for Changes that Were Not Implemented</b>
1) Page 5, have you found a correlation between ACT scores and performance in Cellular Biology grades?	?	First we want to make sure that the University Assessment Committee realizes the ACT scores we are targeting are the student's science scores not their overall ACT score. The RECOMMENDATION that students scoring below an ACT score of 19 in the sciences enroll in General Biology 1114 before taking Cellular Biology was strictly based upon a discussion between the faculty and at the time this recommendation was put forward we had no way of correlating ACT scores with performance in Cellular Biology. This is something the department can research but realize this is just a recommendation not a requirement, students can still enrolled in Cellular Biology 1144 as long as they are not considered to be deficient in the sciences from their high school transcript.
2) Was Biol. 1114 only offered in class since the pretest was given "on the first day of class"	?	We assume the committee member is asking about Biol. 1144 (General Cellular Biology) which is the only general biology course being assessed. This course is primarily only for students majoring and biology and is only offered as an on-ground course in Claremore, Bartlesville and Pryor.
3) On page 11, 2b---Why are you reporting on Fall 2013 & Spring 2014 results in this report?	?	The reason for the previous year being included is because of the few number of Associate in Biology students we have to assess. Over the last three reports only 24 students were known AS majors in biology, the biology committee decided to accumulate data over a several year period to be more statistically robust in their assessment of the program. To help clarify the biology committee is now illustrating (in the form of a table), the total number of students assessed over a several year period and the results from this cumulative action.

4) Rather than having student repeat the worksheet/quiz over laboratory safety, have you considered using the LMS to have a test bank of safety questions and have the student take it online until they achieve mastery? It might be less work for the department in administering the assessment.	Y	The biology committee agrees and this is a great suggestion and will hopefully be implanted with the new change to Jezsabar. Previously each lab instructor did not have a "shell" for each of their labs but with the new system this should now be possible and we will work on creating this safety quiz for students.
---	---	---

#### PART 4

#### Analysis of Evidence of Student Learning Outcomes

For all student learning outcomes (as listed in Part 1 B above), describe the assessment measures and performance standards used, as well as the sampling methods and sample sizes. For each measure, document the results of the activity measured and draw relevant conclusions related to strengths and weaknesses of their performance.

A. Student Learning Outcomes	B. Assessment Measures	C. Performance Standards	D. Sampling Methods	E. Sample Size (N)	F. Results	G. Conclusions	H. Performance Standards Met (Y/N)
1. Demonstrate an understanding of General Cellular processes.	Comprehensive Pre-Post Exam  Comprises a 50 multiple-choice question exam on basic concepts covered in the course.  This exam was administered as a pre-post test.  We consider two	70% of students declaring an AS in Biology will score 70% or above.	Administered to all students in General Cellular Biology (Biol. 1144) during both Fall and Spring terms but only the declared AS in Biology students will be analyzed.  Pre-test was	Fall 15 = 8  Spring 16 = 6	This is the second assessment cycle were the AS in Biology students were "teased" out of the General Cellular Biology 1144. The total number of students in Biol. 1144 for both semesters -that were sampled was 171, of these 171 students we had only 14 that were declared AS in Biology majors.  Below are our results from this assessment cycle.  <b>Fall 15 Score Distribution</b> <hr/> Fall 15 0-49%      2	We did not meet our performance standard. Since only declared AS in biology students were analyzed this is an extremely small sample size (24 -for the last two SLRs) and the faculty believed this is too small of sample sized to be statistically significant. Our plan is to continue to separate out the AS students and over the years increase our total	N

A. Student Learning Outcomes	B. Assessment Measures	C. Performance Standards	D. Sampling Methods	E. Sample Size (N)	F. Results	G. Conclusions	H. Performance Standards Met (Y/N)										
	<p>results: 1) post test scores, and 2) the difference in pre-post test scores.</p> <p>Here, we discuss the post-test score results. Change in pre-post scores is discussed in next section..</p>		<p>given in first class meeting</p> <p>Post-test was given at time of final exam</p>		<table border="0"> <tr> <td>50-59%</td> <td>1</td> </tr> <tr> <td>60-69%</td> <td>2</td> </tr> <tr> <td>70-79%</td> <td>2</td> </tr> <tr> <td>80-89%</td> <td>1</td> </tr> <tr> <td>90-100%</td> <td>0</td> </tr> </table> <p>For the fall 15 only 38% made 70% or better on the post test.</p> <hr style="border-top: 1px dashed black;"/>	50-59%	1	60-69%	2	70-79%	2	80-89%	1	90-100%	0	<p>numbers to make our assessment measurement more robust.</p> <p>The strengths for this assessment measure is that we will be able to better assess just the AS majors in the future. Although when we compare how the AS students are doing in relation to other students in Cellular Biology 1144 the difference is similar. AS students average on the post test was 63.4% while the whole class average was 67.2% (which includes BS in biology majors as well as AS in nursing majors).</p> <p>The weakness of this measure is the low number of students that we are currently able to assess. Faculty cannot currently make valid instructional changes with such a</p>	
50-59%	1																
60-69%	2																
70-79%	2																
80-89%	1																
90-100%	0																

A. Student Learning Outcomes	B. Assessment Measures	C. Performance Standards	D. Sampling Methods	E. Sample Size (N)	F. Results	G. Conclusions	H. Performance Standards Met (Y/N)												
					<p style="text-align: center;">Spring 16</p> <hr/> <p style="text-align: center;"><b>Score Distribution</b></p> <p style="text-align: center;">Sp16</p> <table border="0" style="margin-left: auto; margin-right: auto;"> <tr><td>0-49%</td><td>1</td></tr> <tr><td>50-59%</td><td>1</td></tr> <tr><td>60-69%</td><td>2</td></tr> <tr><td>70-79%</td><td>0</td></tr> <tr><td>80-89%</td><td>1</td></tr> <tr><td>90-100%</td><td>1</td></tr> </table> <p>For the spring the Spring we had 6 students declared as AS Biology majors</p> <p>For the Spring 16 33% made 70% or better on the post test.</p>	0-49%	1	50-59%	1	60-69%	2	70-79%	0	80-89%	1	90-100%	1	low number of students assessed.	
0-49%	1																		
50-59%	1																		
60-69%	2																		
70-79%	0																		
80-89%	1																		
90-100%	1																		
2. Apply understanding of the taxonomy, morphology, and physiology of the Animal and Plant Kingdoms.	2a Unit exams that assess the understanding of taxonomy, morphology, and physiology of plants.	2a. At least 70% of students in General Botany (BIOL 2104) declaring an AS in Biology will score 70%	2a. All students in General Botany will be given unit exams pertaining to this objective and each of	2a. Fall of 2015 and Spring 16 had only 3 AS students assessed	2a. During the Fall of 2015 and Spring 2016, 100% of the AS students scored 70% or better on all 4 unit exams.  During Fall 2015 and Spring 2016 semesters Botany had only 3 students out of 84 as AS majors. The following Table summarizes the Fall 15 ad Spring 16 results.	2a. When comparing Exam 1, Fall 2015, the overall class 95% of the students scored 70% or better whereas 100% of the AS students scored 70% or higher. Exam 2, Fall 2015 the	Y												



A. Student Learning Outcomes	B. Assessment Measures	C. Performance Standards	D. Sampling Methods	E. Sample Size (N)	F. Results	G. Conclusions	H. Performance Standards Met (Y/N)																																						
		or better on all units exams.	these unit exams but only the AS students will be analyzed by the faculty involved.		<p>FALL 2015 and SPRING 2016 SCORE DISTRIBUTIONS</p> <table border="1" data-bbox="968 375 1352 553"> <thead> <tr> <th>Exam</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> </tr> </thead> <tbody> <tr> <td>100%-90% =</td> <td>0</td> <td>2</td> <td>1</td> <td>1</td> </tr> <tr> <td>89-80% =</td> <td>2</td> <td>0</td> <td>2</td> <td>1</td> </tr> <tr> <td>79%-70% =</td> <td>1</td> <td>1</td> <td>0</td> <td>0</td> </tr> <tr> <td>69%-60% =</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>0%-59% =</td> <td>0</td> <td>0</td> <td>0</td> <td>1</td> </tr> </tbody> </table> <p>Percent of students making 70% or better on Unit Exams for Fall 16 and Spring 16</p> <table border="1" data-bbox="968 643 1226 764"> <tbody> <tr> <td>Exam 1 =</td> <td>100%</td> </tr> <tr> <td>Exam 2 =</td> <td>100%</td> </tr> <tr> <td>Exam 3 =</td> <td>100%</td> </tr> <tr> <td>Exam 4 =</td> <td>100%</td> </tr> </tbody> </table>	Exam	1	2	3	4	100%-90% =	0	2	1	1	89-80% =	2	0	2	1	79%-70% =	1	1	0	0	69%-60% =	0	0	0	0	0%-59% =	0	0	0	1	Exam 1 =	100%	Exam 2 =	100%	Exam 3 =	100%	Exam 4 =	100%	<p>overall class 97% of the students scored 70% or better whereas 100% of the AS students scored 70% or higher.</p> <p>Exam 3, Fall 2015, the overall class 79% of the students scored 70% or better whereas 100% of the AS students scored 70% or higher.</p> <p>Exam 4, Fall 2015 the overall class 71% of the students scored 70% or better whereas 100% of the AS students scored 70% or higher.</p> <p>When comparing Exam 1, Spring 2016, the overall class 84% of the students scored 70% or better whereas 100% of the AS students scored 70% or higher.</p> <p>Exam 2, Spring 2016 the overall class 98% of the students scored 70% or better whereas 100% of the AS students scored 70% or higher.</p>	
Exam	1	2	3	4																																									
100%-90% =	0	2	1	1																																									
89-80% =	2	0	2	1																																									
79%-70% =	1	1	0	0																																									
69%-60% =	0	0	0	0																																									
0%-59% =	0	0	0	1																																									
Exam 1 =	100%																																												
Exam 2 =	100%																																												
Exam 3 =	100%																																												
Exam 4 =	100%																																												

A. Student Learning Outcomes	B. Assessment Measures	C. Performance Standards	D. Sampling Methods	E. Sample Size (N)	F. Results	G. Conclusions	H. Performance Standards Met (Y/N)
						<p>Exam 3, Spring 2016, the overall class 93% of the students scored 70% or better whereas 100% of the AS students scored 70% or higher.</p> <p>Exam 4, Spring 2016 the overall class 81% of the students scored 70% or better whereas 50% of the AS students scored 70% or higher.</p>	

A. Student Learning Outcomes	B. Assessment Measures	C. Performance Standards	D. Sampling Methods	E. Sample Size (N)	F. Results	G. Conclusions	H. Performance Standards Met (Y/N)																																										
	2b Unit exams that assess the understanding of taxonomy, morphology, and physiology of animals.	2b. At least 70% of students declaring an AS in Biology in General Zoology (BIOL 2205) will score 70% or better on all unit exams.	2b. All students General Zoology (BIOL 2205) will be given unit exams pertaining to this objective and each of these unit exams will be analyzed by the faculty involved. Only the declared AS in Biology students will be reported.	2b.7 assessed	<p>2b. During the Fall 2015 and Spring 16 Zoology had only 7 students out 80 students were AS Biology majors. The following Table summarizes the Fall 15 and Spring 16 results.</p> <p style="text-align: center;">FALL 2015 and SPRING 16 SCORE DISTRIBUTIONS</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Exam</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>5</th> <th>6</th> </tr> </thead> <tbody> <tr> <td>100-90% =</td> <td>3</td> <td>2</td> <td>1</td> <td>2</td> <td>3</td> <td>1</td> </tr> <tr> <td>89-80% =</td> <td>1</td> <td>2</td> <td>2</td> <td>1</td> <td>1</td> <td>3</td> </tr> <tr> <td>79-70% =</td> <td>1</td> <td>1</td> <td>3</td> <td>2</td> <td>2</td> <td>3</td> </tr> <tr> <td>69-60% =</td> <td>1</td> <td>2</td> <td>1</td> <td>2</td> <td>1</td> <td>0</td> </tr> <tr> <td>0-59% =</td> <td>1</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> </tbody> </table> <p><u>Percent of students making 70% or better on Unit Exams for Fall 15 and Spring 16</u>  Exam 1 = 71%  Exam 2 = 71%  Exam 3 = 86%  Exam 4 = 71%  Exam 5 = 86%  Exam 6 = 100%</p> <p>During the Fall 2015 and Spring 16 70% of AS students made 70% or better on all the unit exams.</p> <p>Because of low numbers of AS Biology students we combined scores from previous semesters to obtain a more robust analysis. All of the Fall semesters from 2013-2015 are combined together and all of the Spring semesters from 2014-2016 are combined together to give an overall analysis of all 24 students that where declared AS Biology</p>	Exam	1	2	3	4	5	6	100-90% =	3	2	1	2	3	1	89-80% =	1	2	2	1	1	3	79-70% =	1	1	3	2	2	3	69-60% =	1	2	1	2	1	0	0-59% =	1	0	0	0	0	0	<p>2b. For Fall 15 and Spring 16 we meet our performance standard. Although "teasing out" the AS students for the last three SLRs have yet to accumulate enough students to determine any statistically significant differences (again only a total of 24 AS students have been assessed over the last three SLRs).</p> <p>With the combined semesters will are still meeting our standards. Because this is still such a low number of students (24) it is</p>	Y
Exam	1	2	3	4	5	6																																											
100-90% =	3	2	1	2	3	1																																											
89-80% =	1	2	2	1	1	3																																											
79-70% =	1	1	3	2	2	3																																											
69-60% =	1	2	1	2	1	0																																											
0-59% =	1	0	0	0	0	0																																											

A. Student Learning Outcomes	B. Assessment Measures	C. Performance Standards	D. Sampling Methods	E. Sample Size (N)	F. Results	G. Conclusions	H. Performance Standards Met (Y/N)
					<p>majors. We combined the Fall semester together and Spring semesters together to also analyze any differences between the two semesters.</p> <p>Percent of students making 70% or better on Unit Exams for Fall 13; Fall 14 &amp; Fall 15 Exam 1 = 70% Exam 2 = 70% Exam 3 = 86% Exam 4 = 86% Exam 5 = 86% Exam 6 = 100%</p> <p>Percent of students making 70% or better on Unit Exams for Spring 14, Spring 15 &amp; Spring 16 Exam 1 = 86% Exam 2 = 79% Exam 3 = 71% Exam 4 = 71% Exam 5 = 92% Exam 6 = 85%</p> <p>Cumulatively for the 24 students that have been assessed over the last three SLRs 70% of the students have made 70% or better on all six unit exams.</p>	<p>believed that this is not a -statistically significant number to warrant -instructional changes at this time.</p>	
3. Demonstrate an understanding of the atom, compounds, matter, gases, solutions, atomic theory,	The difference in pre and post test scores was calculated for each student. These values were used in this analysis .	70% of AS in Biology students will improve on the post-test by 20% or greater over the pre-test	Given to all students in both Fall and Spring terms but only the AS biology students will be analyzed.	Fall 15 8 Spring 16 6	These tables summarize the difference in student scores for the pre & post test scores for Fall 15 and Spring 16	<p>Student scores on the post-test improved by an average of 24.4% for the Fall 15. Our goal of as least a 20% increase was met.</p> <p>The Spring 16</p>	Y

A. Student Learning Outcomes	B. Assessment Measures	C. Performance Standards	D. Sampling Methods	E. Sample Size (N)	F. Results	G. Conclusions	H. Performance Standards Met (Y/N)																																												
bonding chemical reactions, and chemical kinetics. The program outcome "chemical kinetics" Has been dropped as a program outcome.			Conducted as pre-post test.  Pre-test was given in first class meeting  Post-test was given at time of final exam.		<p style="text-align: center;"><b>Fall 15</b> <b>Score Distribution</b> (Post Test Improvement)</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td>0-10%</td><td style="text-align: right;">1</td></tr> <tr><td>10-20%</td><td style="text-align: right;">3</td></tr> <tr><td>20-30%</td><td style="text-align: right;">1</td></tr> <tr><td>30-40%</td><td style="text-align: right;">2</td></tr> <tr><td>40-50%</td><td style="text-align: right;">1</td></tr> <tr><td>50-60%</td><td style="text-align: right;">0</td></tr> <tr><td>60-70%</td><td style="text-align: right;">0</td></tr> <tr><td>70-80%</td><td style="text-align: right;">0</td></tr> <tr><td>80-90%</td><td style="text-align: right;">0</td></tr> <tr><td>90-100%</td><td style="text-align: right;">0</td></tr> <tr><td><b>Average gain:</b></td><td style="text-align: right;"><b>24.4</b></td></tr> </table> <p style="text-align: center;"><b>Spring 16</b> <b>Score Distribution</b> (Post Test Improvement)</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td>0-10%</td><td style="text-align: right;">1</td></tr> <tr><td>10-20%</td><td style="text-align: right;">1</td></tr> <tr><td>20-30%</td><td style="text-align: right;">1</td></tr> <tr><td>30-40%</td><td style="text-align: right;">0</td></tr> <tr><td>40-50%</td><td style="text-align: right;">2</td></tr> <tr><td>50-60%</td><td style="text-align: right;">1</td></tr> <tr><td>60-70%</td><td style="text-align: right;">0</td></tr> <tr><td>70-80%</td><td style="text-align: right;">0</td></tr> <tr><td>80-90%</td><td style="text-align: right;">0</td></tr> <tr><td>90-100%</td><td style="text-align: right;">0</td></tr> <tr><td><b>Average gain :</b></td><td style="text-align: right;"><b>29</b></td></tr> </table>	0-10%	1	10-20%	3	20-30%	1	30-40%	2	40-50%	1	50-60%	0	60-70%	0	70-80%	0	80-90%	0	90-100%	0	<b>Average gain:</b>	<b>24.4</b>	0-10%	1	10-20%	1	20-30%	1	30-40%	0	40-50%	2	50-60%	1	60-70%	0	70-80%	0	80-90%	0	90-100%	0	<b>Average gain :</b>	<b>29</b>	improved by 29.0% from the pre to post test. Our goal of at least a 20% increase was met.  Overall gain for both semesters was 26.4%  Again this number is to low to make any significant assessment at this point. With cumulative numbers in the future we can make a more knowledgeable assessment.	
0-10%	1																																																		
10-20%	3																																																		
20-30%	1																																																		
30-40%	2																																																		
40-50%	1																																																		
50-60%	0																																																		
60-70%	0																																																		
70-80%	0																																																		
80-90%	0																																																		
90-100%	0																																																		
<b>Average gain:</b>	<b>24.4</b>																																																		
0-10%	1																																																		
10-20%	1																																																		
20-30%	1																																																		
30-40%	0																																																		
40-50%	2																																																		
50-60%	1																																																		
60-70%	0																																																		
70-80%	0																																																		
80-90%	0																																																		
90-100%	0																																																		
<b>Average gain :</b>	<b>29</b>																																																		
4. Demonstrate knowledge about the components and requirements of	A laboratory exercise and worksheet will be administered to all students in Biol. 1144.	100% of the students in Biol. 1144L will complete and pass the worksheet over	All students in majors biology course (Bio. 1144L) were sampled during the Fall 2013	0	No results were recorded because our new laboratory coordinator was still learning and unaware of that this data needed to be collected.	. Although we did not have information for this SLR cycle we are currently putting into place an on-line quiz that each of the	N																																												

A. Student Learning Outcomes	B. Assessment Measures	C. Performance Standards	D. Sampling Methods	E. Sample Size (N)	F. Results	G. Conclusions	H. Performance Standards Met (Y/N)
a safe lab environment.		laboratory safety. This exercise requires students to learn biology laboratory protocols and safety equipment and its proper use and function. This will be a pass/fail exercise. Any student not passing the exercise will be required to repeat the exercise until they can pass.	and Spring 2014			students enrolled in General Cellular Biology Laboratory will be required to pass.	

## PART 5

### Proposed Instructional Changes Based on Conclusions Drawn from Evidence Presented Above

State any proposed instructional or assessment changes to be implemented for the next academic year. They should be based on conclusions reported in Part 4 (above) or on informal activities, such as faculty meetings and discussions, conferences, pilot projects, textbook adoption, new course proposals, curriculum modifications, etc. Explain the rationale for these changes and how they will impact student learning and

other considerations, such as curriculum, degree plan, assessment process, or budget. If no changes are planned, simply state "No changes are planned."

Student Learning Outcomes	Instructional or Assessment Changes	Rationale for Changes	Impact of Planned Changes on Student Learning and Other Considerations.
4. Demonstrate knowledge about the components and requirements of a safe lab environment.	A new on-line safety quiz for each of students taking General Cellular Biology 1144 Laboratory will be required in the next cycle.	For the last two SLR cycles we have had some difficulty in acquiring the results for this learning outcome because of the labs being taught by several adjunct instructors. With the change to Jenzabar each of these adjunct instructors will now have a lab shell that all of their students can utilized for giving an "on-line" safety quiz.	No impact on student learning because some method of a safety quiz has always been given this will assist in the tracking and recording of this quiz results,

**PART 6**

**Shared Pedagogical Insight that Improves Student Learning or Classroom Engagement**

(OPTIONAL) If your department or a faculty member has developed a method or technique of teaching that seems especially effective in improving student learning or student engagement in the classroom, please provide a brief description below. More detail can be communicated during the face to face peer review session.

Description
None

**PART 7 (A & B)**

**Assessment Measures and Faculty Participation**

**A. Assessment Measures:**

1) How many different assessment measures were used? 3

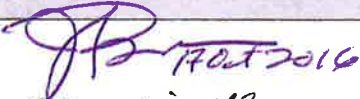



2) List the direct measures (see rubric):

Pretest and post-test in Cellular Biology (BIOL 1144)  
 Unit exam scores in General Botany (BIOL 2104)  
 Unit exam scores in General Zoology (BIOL 2205)

3) List the indirect measures (see rubric): 0

**B.**

1) Provide the names and signatures of all faculty members who contributed to this report and indicate their respective roles:

Faculty Members	Roles in the Assessment Process (e.g., collect data, analyze data, prepare report, review report, etc.)	Signatures
Dr. Jerry Bowen	Collected data for Biol. 1144, reviewed report	
Mrs. Claudia Glass	Collected data for Biol. 1144, and Biol.2104, analyzed data, prepared report, and reviewed report	
Mr. Don Glass	Collected data for Biol. 1144 and Biol. 2205 analyzed data, prepared report, and reviewed report	
Dr. Sue Katz	Reviewed report	



Dr. Craig Zimmerman	Collected data for Biol. 1144, analyzed data	Craig Zimmerman
Dr. Eric Lee	Reviewed report	E. Lee
Dr. Jin Seo	Collected data for Biol. 1144, reviewed report	Jin Seo
Dr. Jae-Ho Kim	Reviewed report	Jae-Ho Kim

2) Reviewed by:

Titles	Names	Signatures	Date
Department Head	Dr. Jerry Bowen	Jerry Bowen	17 Oct 2016
Dean	Dr. Keith Martin	Keith W. Martin	10/18/16

## RUBRIC FOR STUDENT LEARNING STUDENT LEARNING REPORT

**1) A. Are the school, department and program missions clearly stated?**

<b>4 = Exemplary</b>	<b>3 = Established</b>	<b>2 = Developing</b>	<b>1 = Undeveloped</b>
The program, department, and school missions are clearly stated.	The program, department, and school missions are stated, yet exhibit some deficiency (e.g., are partial or brief).	The program, department, and school missions are incomplete and exhibit some deficiency (e.g., are partial or brief).	The program, department, and school missions are not stated.

**B. Are student learning outcomes and department purposes aligned with university commitments and school purposes?**

<b>4 = Exemplary</b>	<b>3 = Established</b>	<b>2 = Developing</b>	<b>1 = Undeveloped</b>
Student learning outcomes and department purposes are aligned with university commitments and school purposes.	Student learning outcomes and department purposes demonstrate some alignment with university commitments and school purposes.	Student learning outcomes and department purposes demonstrate limited alignment with university commitment and school purposes.	Student learning outcomes and department purposes do not demonstrate alignment with university commitment and school purposes.

**2) How well did the department incorporate instructional or assessment changes from last year's report or from other assessment activities?**

<b>4 = Exemplary</b>	<b>3 = Established</b>	<b>2 = Developing</b>	<b>1 = Undeveloped</b>
All planned changes were listed, whether they were implemented or not, and their impact on curriculum or program budget was discussed thoroughly.	Most planned changes were listed, and their status or impact on curriculum or program budget was discussed.	Some planned changes were listed, and their status or impact on curriculum or program budget was not clearly discussed.	No planned changes were listed, and their status or impact on curriculum or program budget was not discussed.

**3) Did the department include peer review feedback and provide rationale for implementing or not implementing suggestions?**

<b>4 = Exemplary</b>	<b>3 = Established</b>	<b>2 = Developing</b>	<b>1 = Undeveloped</b>

All reviewer feedback was listed, and for each suggestion a clear rationale was given for its being implemented or not.	Most reviewer feedback was listed, and for most suggestions a rationale was given for their being implemented or not.	Some reviewer feedback was listed, and for some suggestions a rationale was given for their being implemented or not.	Feedback from reviewers was not included.
---	---	---	---

**4) A. Are the student learning outcomes listed and measurable?**

<b>4 = Exemplary</b>	<b>3 = Established</b>	<b>2 = Developing</b>	<b>1 = Undeveloped</b>
All student learning outcomes are listed and measurable in student behavioral action verbs (e.g., Bloom's Taxonomy).	Most student learning outcomes are listed and measurable in student behavioral action verbs (e.g., Bloom's Taxonomy).	Some student learning outcomes are listed and measurable in student behavioral action verbs (e.g., Bloom's Taxonomy).	Student learning outcomes are either not listed or not measurable.

**B. Are the assessment measures appropriate for the student learning outcomes?**

<b>4 = Exemplary</b>	<b>3 = Established</b>	<b>2 = Developing</b>	<b>1 = Undeveloped</b>
All assessment measures are appropriate to the student learning outcomes.	Most assessment measures are appropriate to the student learning outcomes.	Some assessment measures are appropriate to the student learning outcomes.	None of the assessment measures are appropriate to the student learning outcomes.

**C. Do the performance standards provide a clearly defined threshold at an acceptable level of student performance?**

<b>4 = Exemplary</b>	<b>3 = Established</b>	<b>2 = Developing</b>	<b>1 = Undeveloped</b>
All performance standards provide a clearly defined threshold at an acceptable level of student performance.	Most performance standards provide a clearly defined threshold at an acceptable level of student performance.	Some of the performance standards provide a clearly defined threshold at an acceptable level of student performance.	No performance standards provide a clearly defined threshold at an acceptable level of student performance.

**D. Is the sampling method appropriate for all assessment measures?**

<b>4 = Exemplary</b>	<b>3 = Established</b>	<b>2 = Developing</b>	<b>1 = Undeveloped</b>
The sampling methodology is appropriate for all assessment measures.	The sampling methodology is appropriate for most assessment measures.	The sampling methodology is appropriate for some assessment measures.	The sampling methodology is appropriate for none of the assessment measures.

**E. Is the sample size listed for each assessment measure?**

<b>4 = Exemplary</b>	<b>3 = Established</b>	<b>2 = Developing</b>	<b>1 = Undeveloped</b>
Sample size was listed for all assessment measures.	Sample size was listed for most assessment measures.	Sample size was listed for some assessment measures.	Sample size was not listed for any assessment measures.

**F. How well do the data provide clear and meaningful overview of the results?**

<b>4 = Exemplary</b>	<b>3 = Established</b>	<b>2 = Developing</b>	<b>1 = Undeveloped</b>
For all student learning outcomes the results were clear, more than a single year's results were included, and meaningful information was given that reveals an overview of student performance.	For most student learning outcomes the results were clear, more than a single year's results were included, and meaningful information was given that reveals an overview of student performance.	For some student learning outcomes the results were clear, more than a single year's results were included, and meaningful information was given that reveals an overview of student performance.	For none of the student learning outcomes were the results clear, more than a single year's results were included, and meaningful information was given that reveals an overview of student performance.

**G. Are the conclusions reasonably drawn and significantly related to student learning outcomes?**

<b>4 = Exemplary</b>	<b>3 = Established</b>	<b>2 = Developing</b>	<b>1 = Undeveloped</b>
All conclusions are reasonably drawn and significantly based on the results and related to the strengths and weaknesses in student performance.	Most conclusions are reasonably drawn and significantly based on the results and related to the strengths and weaknesses in student performance.	Some conclusions are reasonably drawn and significantly based on the results and related to the strengths and weaknesses in student performance.	No conclusions are reasonably drawn and significantly based on the results or related to the strengths and weaknesses in student performance.

**H. Does the report indicate whether the performance standards were met?**

<b>4 = Exemplary</b>	<b>3 = Established</b>	<b>2 = Developing</b>	<b>1 = Undeveloped</b>
Stated for all performance standards.	Stated for most performance standards.	Stated for some performance standards.	Not stated for any performance standard.

**5) How well supported is the rationale for making assessment or instructional changes? The justification can be based on conclusions reported in Part 4 or on informal activities, such as faculty meetings and discussions, conferences, pilot projects, textbook adoption, new course proposals, curriculum modifications, etc. Explain the rationale for these changes and how they will impact student learning and other considerations, such as curriculum degree plan, assessment process, or budget.**

<b>4 = Exemplary</b>	<b>3 = Established</b>	<b>2 = Developing</b>	<b>1 = Undeveloped</b>
----------------------	------------------------	-----------------------	------------------------

All planned changes are specifically focused on student learning and based on the conclusions. The rationale for planned changes is well grounded and convincingly explained.	Most planned changes are specifically focused on student learning and based on the conclusions. The rationale for planned changes is mostly well grounded and convincingly explained.	Some planned changes are specifically focused on student learning and based on the conclusions. The rationale for planned changes is lacking or is not convincingly explained.	No planned changes are specifically focused on student learning and based on the conclusions. There is no rationale.
---	---	--	--

**6) Did the faculty include at least one teaching technique they believe improves student learning or student engagement in the classroom?**

Yes	No		
The faculty has included at least one teaching technique they believe improves student learning or student engagement in the classroom.	The faculty has not included any teaching techniques they believe improve student learning or student engagement in the classroom.		

**7) A. How well did the faculty vary the assessment measures?**

4 = Exemplary	3 = Established	2 = Developing	1 = Undeveloped
Assessment measures vary and include multiple direct measures and at least one indirect measure. The number of measures is consistent with those listed.	Assessment measures vary, but they are all direct. The number of measures is consistent with those listed.	Assessment measures do not vary or are all indirect. There is some inconsistency in the number of measures recorded and the total listed.	Assessment measures are not all listed or are listed in the wrong category. The total number of measures is not consistent with those listed.

**B. Does the list of faculty participants clearly describe their role in the assessment process?**

4 = Exemplary	3 = Established	2 = Developing	1 = Undeveloped
The faculty role is clearly identified and it is apparent that the majority of the faculty participated in the process. The roles are varied.	The faculty role is identified and it is apparent that the majority of the faculty participated in the process. The roles are not varied.	The faculty roles are not identified. Few faculty participated.	The faculty roles are not identified. Faculty participation is not sufficiently described to make a determination about who participated.

## EXPLANATION & EXAMPLES OF DIRECT AND INDIRECT EVIDENCE

**DIRECT EVIDENCE of student learning is tangible, visible, self-explanatory evidence of exactly what students have and haven't learned. Examples include:**

- 1) Ratings of student skills by their field experience supervisors.
- 2) Scores and pass rates on licensure/certification exams or other published tests (e.g. Major Field Tests) that assess key learning outcomes.
- 3) Capstone experiences such as research projects, presentations, oral defenses, exhibitions, or performances that are scored using a rubric.
- 4) Written work or performances scored using a rubric.
- 5) Portfolios of student work.
- 6) Scores on locally-designed tests such as final examinations in key courses, qualifying examinations, and comprehensive examinations that are accompanied by test blueprints describing what the tests assess.
- 7) Score gains between entry and exit on published or local tests or writing samples.
- 8) Employer ratings of the skills of recent graduates.
- 9) Summaries and analyses of electronic class discussion threads.
- 10) Student reflections on their values, attitudes, and beliefs, if developing those are intended outcomes of the program.

**INDIRECT EVIDENCE provides signs that students are probably learning, but the evidence of exactly what they are learning is less clear and less convincing. Examples include:**

- 1) Course grades.
- 2) Assignment grades, if not accompanied by a rubric or scoring guide.
- 3) For four year programs, admission rates into graduate programs and graduation rates from those programs.
- 4) For two year programs, admission rates into four-year institutions and graduation rates from those programs.
- 5) Placement rates of graduates into appropriate career positions and starting salaries.
- 6) Alumni perceptions of their career responsibilities and satisfaction.
- 7) Student ratings of their knowledge and skills and reflections on what they have learning over the course of the program.
- 8) Those questions on end-of-course student evaluations forms that ask about the course rather than the instructor.
- 9) Student/alumni satisfaction with their learning, collected through surveys, exit interviews, or focus groups
- 10) Honors, awards, and scholarships earned by students and alumni.

Suskie, L. (2004). *Assessing Student Learning: A Common Sense Guide*. Anker Publishing Company: Bolton, MA