

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

Fall 2015 – Spring 2016

The Department of Biology in the School of Mathematics, Science & Health Sciences

# Biology, B.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. Seven 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.	Under the Bachelor of Science in Biology, there are two emphases: the Medical/Molecular emphasis and the Environmental Conservation emphasis. The four-year program seeks to develop a biologist well- grounded in either area of emphasis. The student integrates

University Mission	School Mission	Department Mission	Degree Program Mission
	Biology, Communications, English and Humanities, Fine Arts, History and Political Science, Mathematics and Physical Sciences, and Psychology and Sociology departments comprise this school. 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.		mathematical and physical science concepts into biology. The student uses the scientific method as well as evaluates others' use of this method of inquiry. He/she writes and presents scientific papers and reports. The degree is augmented with individual research and internships for successful postgraduate and professional careers.

- 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.	To increase the student's critical thinking and reasoning abilities.  To prepare a student to matriculate into a four-year degree program in math or science related fields or graduate.	1. To demonstrate an understanding of the fundamental processes of life.  2. To apply scientific method and interpret current technology and research techniques relating to the biological sciences.
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 student 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.	3. To be adequately prepared for transition into a productive professional career.  4. To demonstrate an understanding of the fundamental processes of life. <b>(This</b>

University Commitments	School Purposes	Department Purposes	Student Learning Outcomes
			outcome meets two different departmental purposes).
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 reinforces and strengthens service. An emphasis of service encourages social awareness and responsibility among faculty and students.	<p>To increase the student's awareness of the benefits of incorporation of technology into science studies.</p> <p>To serve as a resource for the community; utilizing the expertise of the faculty.</p>	5. To apply scientific method and interpret current technology and research techniques relating to the biological sciences <b>(This outcome meets two different departmental purposes).</b>

## PART 2

### Discussion of Instructional Changes Resulting from 2015-2016 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
To improve outcome 1, the development of a new Medical/Molecular course, Molecular Laboratory Techniques and modification of the Medical/Molecular degree plan. make it a sentence	Y	BIOL 3503 – Molecular Cell Biology and BIOL 3512– Molecular Techniques Lab have been approved the State Regents and are now being offered in the Medical/Molecular degree option. Likewise, the changes to the degree plan have been implemented, thereby, increasing the required Medical/Molecular hours from 16hrs to 17hrs while decreasing selective electives from 12hrs to 11hrs.
To improve consistency in course curriculum and assessment of SLOs, the Research Methods Assessment committee was formed and has begun developing a course cartridge for MyRSU with essential curriculum components for Biol 4602B – Research Methods I and Biol 4801 – Research Methods II. In addition, emphasis on SLO assessment will be given specific attention.	Y	The development of a more robust on-line component should help improve the utilization of MyRSU instruction tools while providing greater consistency in curriculum among the numerous instructors. The ability of the course cartridge to be passed from instructor to instructor each semester should prove beneficial to instructors and students alike.

### PART 3

#### Discussion About the University Assessment Committee's 2015-2016 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."

Feedback and Recommended Changes from the University Assessment Committee	Suggestions Implemented (Y/N)	Changes that Were or Will Be Implemented, or Rationale for Changes that Were Not Implemented
One reviewer suggested using 5% of national mean rather than one standard deviation "to assess the success of your student compared to all students taking the Biology ETS exam."	N	Based on our group discussion, we feel we more than adequately explained our reasons for selecting our one standard deviation criteria. In short, our reasons are based on the statistical significance of the one deviation and the need to have a fairly high degree of certainty that differences we observed in student's scores are, in fact, real and not random variation. It would seem unwise to initiate curriculum changes based on random variations. Even using one standard deviation as our criteria, we should expect an error rate of roughly 32%. It could be argued that this is too high and our criteria should be increased to two standard deviations. On the other hand, 5% deviance would not provide any statistically valid information.
In part 4, page 8, in assessment measure 2a, instead of 80%, using good or excellent (4 or 5 in Likert scale) makes more sense/consistent.	Y	The "80%" in Part 4 – 2a has been changed to "indicate 4 or greater (on a Likert scale)" as suggested.
For measure 1c, why did you choose unequal performance standards for the four sub scores (3 at 5% and 1 at 10% of the national mean)?	Y	The "within 5% in three subsets and within 10% in the four subset" criteria was replaced with "within one standard deviation for three of the four subsets". The decision to for using three of four instead of all four is due to the fact our degree tracks are either Medical/Molecular or Conservation/Environmental. Given the focus of each degree tract, it is appropriate to expect one subset (Subset #2 – Molecular Biology and Genetics for Environmental/Conservation students and Subset #4 - Population Biology, Evolution, and Ecology for Medical/Molecular students) to be below our one standard deviation criteria.
For SLO 2, how does "Apply scientific method and interpret current research techniques relating to the biological sciences" relate the measure of student self-assessment of their understanding of the program objectives 2?	N/A	SLO 2 is assessed by three measures (1) student assessment of the understand following their capstone research project that allow them to utilize their understanding of the scientific method and research techniques, (2) faculty mentor assessment of student understand of SLO2 as related to Capstone Written report, and (3) assessment of oral presentation.

## 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. To demonstrate an understanding of the fundamental processes of life.	1a. Survey in BIOL 4801 - Biology Research Methods II assessing understanding of program objective 1.	1a. On the survey, 70% of our students will rank them-selves as a 4 or greater (Likert scale from 1 to 5) on their understanding of the fundamental processes of life.	1a. All students in the BIOL 4801 classes in Fall 2015 & Spring 2016	1a. 31	1a. Questions were based on a Likert scale from 1 to 5, with 1 being very poor and 5 being excellent. Result average was 4.4. Of the 31 students surveyed, 12 ranked themselves as 5 (excellent) and 18 ranked themselves as 4 (Good), and 1 ranked themselves as a 3 (average) on mastery of program objective 2. This result is comparable to last year's result, which had the same sample 8 ranked themselves as 5, 20 ranked themselves as 4, and 1 ranked themselves as a 3.	1a. 90% indicated understanding of program objective 1. Our goal of 70% was reached. These results are an indirect measure and are of our student's perception of whether or not they think they have an understanding of outcome #1. Although subjective, it is important to know whether or not our students believe they are learning. According to our results, we are accomplishing our goal. This also allows us to compare a student's perception of their knowledge to a more objective method (the ETS). No instructional changes are anticipated.	1a. Y
	1b. Education Testing Service Major Field Assessment Exam for Biology	1b. The program mean will be within one standard deviation of the	1b All students in students in BIOL 4801.	1b. 32	1b. Our students had a mean score of $143 \pm 9$ for the ETS compared with the national average $153 \pm 13$ . Student scores ranging from 133-168	1b. Our average student score was within one standard deviation of the national mean. Since 2012-2013, our average student score has been within	1b. 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)
	in BIOL 4801, Biology Research Methods II.	normative mean on Major Fields Test in biology.			with 26 of 32 students with scores of 140 or greater (within one standard deviation of the national mean).	one standard deviation of the national mean. Given the diversity of our student population, we believe this is a significant accomplishment. No new instructional changes are anticipated.	
	1c. Education Testing Service Major Field Assessment Exam for Biology in BIOL 4801, Biology Research Methods II.	1c. ETS exam reports four sub-scores in: a) Cell Biology, b) Molecular Biology & Genetics, c) Organismal Biology, and d) Population Biology, Evolution, & Ecology. Our measure is that three of the four sub-scores for the exam will be within one standard deviation of their normative means.	1c. All students in students in BIOL 4801.	1c. 32	1c. Across both degree programs, students averaged $143 \pm 9$ while the national average was $153 \pm 13$ . The distribution of student scores within one standard deviation of the mean for each subset is listed in Appendix A. Subset #1 – Cell Biology: 24/32 students were within one standard deviation of the National Mean. For subset #2 – Molecular Biology and Genetics: 26/32 students were within one standard deviation of the National Mean. For subset #3 – Organismal Biology: 25/32 students were within one standard deviation of the National Mean. For subset #4 – Population Biology, Evolution, and Ecology: 27/32 students were within one standard deviation of the National Mean.	1c. In regards to cumulative ETS scores across all subsets, our students performed well compare to the national mean. On average, 28 of 32 were above one standard deviation of the national mean. Cumulative student totals from 2012-2014 are also reported in Appendix A. No new instructional changes are anticipated.	1c. 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)
2. To apply scientific method and interpret current technology and research techniques relating to the biological sciences.	2a. Survey in BIOL 4801, Biology Research Methods II, covering understanding of program objective 2.	2a. 70% of students will indicate 4 or greater (on a Likert scale) understanding of program objective 2.	2a. All students in the BIOL 4801 classes in Fall 2014 & Spring 2015	2a.16 students surveyed.  Note: Some data was lost from the fall semester class in the change to MyRSU. There were 24 students in the fall, data was obtained for 7; There were 9 students in the spring semester, and data was acquired for all 9.	2a. Questions were based on a Likert scale from 1 to 5 with 1 being very poor and 5 being excellent. Of the 16 students surveyed 4 ranked themselves as 5 (excellent) and 9 ranked themselves as 4 (Good), and 3 (average) on mastery of program objective 2. Overall average for all students surveyed was 4.3.	2a. 81% indicated understanding of program objective 2. Our goal of 70% was reached. These results are an indirect measure and are of our student's perception of whether or not they think they have an understanding of outcome #2. Although subjective it important to know whether or not our students believe they are learning. According to our results, we are accomplishing our goal. No new instructional changes are anticipated.	2a. Y
	2b. BIOL-4801, Biology Research Methods II, research project paper of respective	2b. 80% of students will earn a grade of "B" on the written paper for BIOL 4801. Grade assigned by instructor and	2b. All students in BIOL 4801 Fall 2015 and Spring 2016.	2b. 31	2b. Over 93% (29/31=93.5%) of students completing Research Methods II in Fall and Spring 2015-2016 earned a grade of B or higher on the written paper	2b. The mentoring process between faculty mentor and mentee is providing sufficient feedback to students as they prepare the final version of their papers. No new instructional changes are anticipated.	2b. 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)
	research findings.  2c. BIOL-4801, Biology Research Methods II, oral presentation of respective research findings.	mentor.  2c. 80% of students will earn a grade of "B" on the presentation for BIOL 4801. Grade assigned by Biology Faculty.	2c. All students in BIOL 4801 Fall 2015 and Spring 2016.	2c. 31	2c. Over 80% (25/31=80.6%) of students completing Research Methods II in Fall and Spring 2015/2016 earned a grade of B or higher on the research presentation	2c. Students are able to present their research findings in a comprehensive manner, as a combined result of efforts by the students and faculty mentors. No new instructional changes are anticipated.	2c. Y
3. To be adequately prepared for transition into a productive professional career.	3a. The Biology Faculty will administer a post-graduate survey of convenience consisting of 21 questions, by e-mail or phone asking about their transition from RSU into post-graduate endeavors (job, internship, graduate school, professional school). The survey will be administered to graduates 2 and 5 years post-	3a. Of the surveys returned, 70% of the past graduates will indicate a score of 4 on a scale of 1 to 5 (5 being high) for their transitions from RSU in post-graduate endeavors (job, internship, graduate school, professional school).	3a. The Biology Faculty will administer a post-graduate survey by e-mail about their transition from RSU into post-graduate endeavors (job, internship, graduate school, professional school).	3a. 16	3a. Of the 33 surveys sent, we had 16 responses (7 from 2012 graduates and 9 from 2010 graduates). Fourteen out of sixteen responses were 4 or better on the Likert scale, a result of 88% in regards to preparedness for post-graduate careers and/or graduate school. Fourteen of sixteen students responded with 4 or better in regards to skills and knowledge being better than graduates from other biology programs. Fifteen of sixteen students responded with 4 or better in regards to recommending RSU to a friend. These results exceed our 70% criterion.	3a. In comparison to our previous SLR, our respondent rate of 16/33 was encouraging. We are now using ZIP online survey rather than hard copy mail survey in the hope of increasing our respondent rate. Based on our student survey, our student responses exceeded our 70% criterion for preparedness for post-graduate careers, biology skills and knowledge and recommending our program to a friend. This would seem to suggest a high degree of student satisfaction with our degree program.	3a. 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)
	<p>graduation.</p> <p>3b. The Biology Faculty will administer a survey to collect students' activities post-graduation. <b>The survey will be administered to graduates 2 and 5 years post-graduation.</b></p>	<p>3b. 80% of reporting students are working or continuing education in biology. 50% are in graduate or professional school.</p>	<p>3b. Biology faculty will administer a survey to collect information about student's activities post-graduation.</p>	<p>3b.182</p>	<p>3b. Since May 2003 we have had 316 students graduate with BS in Biology. Of these 316 students, we have been able to track 212 graduates. These 212 graduates have been placed in the following;</p> <ul style="list-style-type: none"> <li>3 Physical Therapy</li> <li>3 Dentistry</li> <li>4 Emergency Medical Technician</li> <li>2 Occupational Therapist</li> <li>6 R.N.</li> <li>1 Surgical Technician</li> <li>1 Optometry</li> <li>10 Physicians Assistant</li> <li>3 Veterinarian</li> <li>4 Dentistry</li> <li>36 Medical School (D.O. and M.D.)</li> <li>5 Medical Technologists</li> <li>15 Water Quality/Environmental Quality/Safety</li> <li>8 Game Wardens/F&amp;W S/Army Core of Engineers</li> <li>5 Pharmacists (Pharm. D.)</li> <li>5 Naturalists and Guides</li> <li>24 Graduate School Programs</li> <li>14 Education (including K-16)</li> <li>59 Other occupations, including businesses</li> </ul> <p>It is also important to note that not all professional schools</p>	<p>3b. This data suggests that 90% of our graduates are either working in the professional field of biology or are in graduate or professional school. This does meet our expected values of 80%. No new instructional changes are anticipated.</p>	<p>3b. Y</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)
					require a degree and for this reason these numbers under represented the actual number of RSU students enrolled or graduated from professional schools.		

## 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.
1. To demonstrate an understanding of the fundamental processes of life.	Dr. Lisa Overall was hired.	Dr. Overall was hired to fill the position left vacant by the retirement of Dr. Adele Register.	Dr. Overall will give the Bartlesville students the ability to take the courses previously offered along with Microbiology. This new course offering in Bartlesville will greatly benefit our pre-nursing students.
2. To apply scientific method and interpret current technology and research techniques relating to the biological sciences.	Dr. Lisa Overall was hired.	Dr. Overall was hired to fill the position left vacant by the retirement of Dr. Adele Register.	Dr. Overall will give the Bartlesville students the ability to take the courses previously offered along with Microbiology. This new course offering in Bartlesville will greatly benefit our pre-nursing students. Moreover, Dr. Overall's research experience will benefit our students senior capstone research projects.

## 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 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? 6
- 2) List the direct measures (see rubric): Written and Oral Presentations in Research Methods II; ETS Results; Written Laboratory exercise on laboratory safety
- 3) List the indirect measures (see rubric): Senior Survey (Mastery of Program Survey) and Post-Graduate Survey



**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	Reviewed report	
Mrs. Claudia Glass	Reviewed report	
Mr. Don Glass	Collected data, Analyzed data, Prepared report, & reviewed report	
Dr. Sue Katz	Collected data, Analyzed data, Prepared report, & reviewed report	
Dr. Jae-Ho Kim	Reviewed report	
Dr. Eric Lee	Collected data, Analyzed data, Prepared report, & reviewed report	

Dr. Craig Zimmerman 	Reviewed report	
Dr. Jin Soe 	Reviewed report	

2) Reviewed by:

Titles	Names	Signatures	Date
Department Head	Dr. Jerry Bowen		13 Oct 2016
Dean	Dr. Keith Martin		10/18/16

## Appendix A:

ETS Subset Distribution for 2015-2016

	Subset 1 – Cell Biology	Subset 2 – Molecular Biology and Genetics	Subset 3 – Organismal Biology	Subset 4 – Population Biology, Evolution and Ecology
Number of students within one standard deviation of National Mean	24	24	25	27
Number of students Below one standard deviation of National Mean	8	8	7	5
Total	32	32	32	32

Cumulative ETS Subset Distribution for 2013-2016

	Subset 1 – Cell Biology	Subset 2 – Molecular Biology and Genetics	Subset 3 – Organismal Biology	Subset 4 – Population Biology, Evolution and Ecology
Number of students within one standard deviation of National Mean	82	84	88	92
Number of students Below one standard deviation of National Mean	25	23	19	15
Total	107	107	107	107



## RUBRIC FOR STUDENT LEARNING STUDENT LEARNING REPORT

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

4 = Exemplary	3 = Established	2 = Developing	1 = Undeveloped
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?

4 = Exemplary	3 = Established	2 = Developing	1 = Undeveloped
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?

4 = Exemplary	3 = Established	2 = Developing	1 = Undeveloped
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?

4 = Exemplary	3 = Established	2 = Developing	1 = Undeveloped
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	Most planned changes are specifically focused on student learning and based on the conclusions. The rationale for planned changes is mostly well	Some planned changes are specifically focused on student learning and based on the conclusions. The rationale for planned changes is lacking or is	No planned changes are specifically focused on student learning and based on the conclusions. There is no rationale.

and convincingly explained.	grounded and convincingly explained.	not convincingly explained.	
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**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 learned 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

