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

Fall 2013 – Spring 2014

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. 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.	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, 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.		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 **Curriculum** 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 promote an atmosphere of academic and intellectual freedom and respect for diverse expression in an environment of physical safety that is supportive of teaching and learning.	The School promotes a challenging, positive, and inquisitive Collegial environment of high ethical standards and of frequent interactions between faculty and students to foster independent thought and the collegial exchange of ideas.	To apply good laboratory practice to minimize/eliminate potential laboratory hazards.	3. Demonstrate knowledge of safety protocols
To provide a general liberal arts education	The School recognizes the importance of	To increase the student's understanding	4. To be adequately prepared for transition

University Commitments	School Purposes	Department Purposes	Student Learning Outcomes
that supports specialized academic program sand prepares students for lifelong learning and service in a diverse society.	scientific literacy in general education and its contribution to the liberal studies curriculum of the university.	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.	into a productive professional career. 1. To demonstrate an understanding of the fundamental processes of life. **(This 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.	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.	2. To apply scientific method and interpret current technology and research techniques relating to the biological sciences **(This outcome meets two different departmental purposes).**

PART 2

Discussion of Instructional Changes Resulting from 2012-2013 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
Outcome #1, Measure B: Results from the ETS exam are being analyzed by sub-scores	Y	This should not have an impact on the current budget. To improve sub-scores a curriculum change is under consideration for the medical/molecular program. The information gained about student learning is used by the department faculty who teach in the various disciplines to evaluate what didactic and laboratory information/exercises are taught. In 2013-2014, this information led to the realization of the need for an expanded molecular biology techniques course. The discussion led to a decision to develop the course and accompanying Medical/Molecular degree plan modifications. In this current year, 2014-2015, we have continued this discussion and will complete the proposal. With approval of the Regents, we expect to add the course and degree plan changes during the 2015-2016 year. Several new electives were offered in 2013-2014 as Biol. 3950 – Special Topics. Pathology was offered for Medical/Molecular majors, and the Environmental Conservation majors were offered the opportunity to take Herpetology as an elective.
Outcome #3: Demonstrate knowledge of safety protocols. The department has developed a measurable outcome that will allow for better assessment of laboratory safety protocols.	Y	The continued implementation of this assessment measure will have no impact on curriculum. We have already budgeted for the hiring of a laboratory coordinator that will assist in the continued assessment of this outcome.
The department has purchased a variety of new equipment to be used in a number of different biology courses. This will provide students with the exposure to modern technologies needed for a career in biology.	Y	The additional money collected from lab fees has allowed the department to purchase new equipment to advancement our technology within the program for 2013-2014. We were allocated $47,200 and the following equipment was purchased; microscopes, including an inverted microscope for tissue culture, *Drosophila* incubator, Nexcellom Biosciences cell counter and supplies, FDX/HDS reader and tags, LiCor X-Digit Blot scanner, parabola recording package, thermal imaging camera, and GPS units. The purchase has allowed the expansion of research and teaching in both

		Medical/Molecular and Environmental Conservation programs. Grant fund (OK-INBRE and matching from LiCor) supplied money for Western Blot imager (approx. 47,000), as well as multichannel pipettors and equipment (pipettors and microcentrifuges for BIOL 1144 General Cellular Biology Lab exercises at Claremore, Bartlesville and Pryor.

PART 3

Discussion About the University Assessment Committee's 2012-2013 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
Part 1B: Your previous SLR indicated that the department is considering revising the department purpose ("to prepare a student to matriculate into a four year degree program in math...") this year. Has there been any progress made towards this move?	N	Our department is currently working on updating our school mission statement. Once complete, the assessment committee will incorporate the statement and re-assess our SLRs to incorporate any necessary changes.
Part 2: Some of the instructional/Assessment changes listed in section 2 of the 2012-13 SLR did not list impact on curriculum or budget. For example: - Additional of new electives (Forestry & GIS) did not address impact on the curriculum. Will this require an increase in the number of hours required to graduate?	Y	Both courses are electives and therefore will not impact our curriculum or degree program. However, these courses will provide greater elective opportunities in completing the B.S. degree.
Part 2: Column 3 item d is unclear. Did you mean to state: "The additional money collected from lab fees has enabled the department to purchase new equipment to advance our technology within the program..."	Y	We agree with the review and have changed the statement to the version suggested by the reviewer.
Part 2: The proposed mentoring process listed on page 7 Section 4 of the 2011-12 SLR (between faculty mentor and mentee in	N	The Research Methods student-mentor process is not a proposed process but rather has been in place since before the 2011-12 review.

"providing sufficient feedback to students as they prepare the final version of their papers") was not addressed in section 2 of the 2012-13 SLR.		
Part 3: Outcome 1a (p.9): You reported that you will change your performance standard to read: "On the survey, students will rank themselves as a 4 or greater (Likert Scale from 1 to 5) on their understanding of the fundamental process of life." However, the standard still reads "mastery" as opposed to "understanding." -	Y	"Mastery" has been changed to "understanding".
Part 3: Regarding UAC's suggestion related to the need to consider adopting formative measures (p.6 of 2012-13 SLR): Consider assessing an entry level and mid-point course.	N	Currently, our midpoint 2000 level courses (Biol. 2104 – Botany and Biol. 2205 – Zoology) are not consistently taken at the sophomore level and/or are taken at another institution (TCC). As such, the incorporation of a midpoint measurement would seem inappropriate. The measure of our graduate's knowledge base will be best observed by utilizing the current assessment of BIOL 46XX and Biol. 480X Research Methods I and II, since all B.S. Biology majors are required to complete these before graduation.
Part 3: utcome 1c: The four sub-scores for the ETS exam (p.9) ought to be listed under the assessment measure B.	Y	The four sub-scores are now listed on page 9.
Part 4A: Outcome 3's ("Demonstrate knowledge of safety procedures") assessment measure unclear (p.11). What does the exercise entail? Is there are a written component?	No Change Required	This exercise consist of a written worksheet that teaches proper laboratory protocol and the location and proper use of laboratory safety equipment.
Part 4A: Outcome 4b's assessment measure not listed (p.12). It should read "The Biology faculty will administer a survey to collect information about student's activities after graduation.'	Y	The requested changes have been made.
Part 4B: Regarding Outcome 1a (p.9 and addressed above): What is the reason behind selecting an in-direct measure (survey) to gauge student's "understanding of the fundamental process of life" as opposed to other direct measures like exams or written projects?	N	Student achievement is measured by both ETS testing (**a direct measure**) and via an indirect measurement, survey in Research Methods, which measures student's perception of their performance. We believe this provides an objective formal testing of student understanding (ETS) coupled with a subjective informal student assessment.
Part 4B: Although you indicated, in section 3 (Feedback and Recommended Changes from UAC) that the post-graduate survey contains 21 questions, this number was not listed under 4a's Assessment Measure (page 11 of 2012-13 SLR).	Y	We'll add in the number in the appropriate place in section 3.
Part 4D: Sampling method not clear in outcomes 4a and 4b (p.11-12).	Y	Biology department members administer a survey via phone and/or email. Sampling method is a sample of convenience.
Part 4E: Yes		

Part 4F: Outcomes 1b, 1c, 2b and 2c fell short of providing a clear and meaningful overview of results. Distribution data would be helpful to see the number of students who fell short of the threshold.	Y	Distribution data is included in the 2013-2014 Assessment report. (see Appendix A)
Part 4G: Conclusions ought to be tailored to student learning, not just whether the standard is met. For instance, outcome 1c did not address any steps that the instructors plan to take to improve student performance (Page 9)	Y	The ETS is an endpoint assessment. The information gained about student learning is used by the department faculty who teach in the various disciplines to evaluate what didactic and laboratory information/exercises are taught. In 2013-2014, this information led to the realization of the need for a molecular biology techniques course. The discussion led to a decision to develop the course and accompanying Medical/Molecular degree plan modifications. In this current year, 2014-2015, we have continued this discussion and will complete the proposal. With approval of the Regents, we expect to add the course and degree plan changes during the 2015-2016 year.
Part 4H: Yes		
Part 5: Regarding Outcome 4b (p.11): The proposal to "...increase the number of post-graduate sampled (sending more surveys) to hopefully increased the number of respondents" was not addressed under section 5 of the 2012-13 SLR. What impact will this proposal have on your budget?		There will be no impact on the budget, since the post-graduate survey is delivered mostly by email or telephone.
Part 6: None		
Part 7: An impressive array of assessment measures.		
Part 8: Comprehensive		

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	1a. Survey in	1a. On the	1a. All students	1a. 31	1a. Questions were based on a	1a. 90% indicated	1a. 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)
demonstrate an understanding of the fundamental processes of life.	BIOL 4801, Biology Research Methods II, Covering understanding of program objective 1.	survey, students will rank themselves as a 4 or greater (Likert scale from 1 to 5) on their understanding of the fundamental processes of life.	in the BIOL 4801 classes in Fall 2013 & Spring 2014		Likert scale from 1 to 5, with 1 being very poor and 5 being excellent. Of the 31 students surveyed, 8 ranked themselves as 5 (excellent) and 20 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, even though a smaller number of students were sampled.	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.	
	1b. Education Testing Service Major Field Assessment Exam for Biology in BIOL 4801, Biology Research Methods II.	1b. The program mean will be within 5 percent of the normative mean on Major Fields Test in biology.	1b All students in students in BIOL 4801.	1b. 43	1b. Our students had a mean score of 149 for the ETS compared with the national average 153. Student scores ranging from 135-185 with 25 of 43 students with scores of 146 or greater (5% of the national mean) .	1b. Our average student score was within 5% of the national mean. For the last two years our students have had a mean score within 5% of the national mean. This is a major accomplishment considering the diversity of universities involved in ETS testing. No new instructional changes are anticipated. .	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)
	1c. Education Testing Service Major Field Assessment Exam for Biology in BIOL 4801, Biology Research Methods II.	1c. ETS exam reports four sub-0scores 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 5 percent of their normative means. The fourth sub-score will be within 10 percent of the mean.	1c. All students in students in BIOL 4801.	1c. 43	1c. Across both degree programs, students averaged 149 while the national average was 153. Distribution of students within 5% and 10% of subset scores 1-4 are listed in Appendix A. Subset #1 – Cell Biology: 19/34 students were within 5% of the National Mean. 20/43 students were below 10% of the National mean. For subset #2 – Molecular Biology and Genetics: 22/34 students were within 5% of the National Mean. 22/43 students were below 10% of the National mean. For subset #3 – Organismal Biology: 19/34 students were within 5% of the National Mean. 21/43 students were below 10% of the National mean. For subset #4 – Population Biology, Evolution, and Ecology: 21/34 students were within 5% of the National Mean. 19/43 students were below 10% of the National mean.	1c. While our students achieved the 5% criterion, we believe any conclusion based on this criterion is potentially misleading given the low number of students taking the ETS exam. For this reason, we propose, later in this document, to use the more statistically meaningful standard deviation instead.	1c. N
2. To apply scientific method and interpret current technology and	2a. Survey in BIOL 4801, Biology Research Methods II,	2a. 70% of students will indicate 80% understanding of program	2a. All students in the BIOL 4801 classes in Fall 2012 & Spring 2013	2a.31	2a. Questions were based on a Likert scale from 1 to 5 with 1 being very poor and 5 being excellent. Of the 31 students surveyed 11 ranked themselves	2a. 94% indicated understanding of program objective 2. Our goal of 70% was reached. These results are an indirect measure and are of	2a. 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 techniques relating to the biological sciences.	covering understanding of program objective 2.	objective 2.			as 5 (excellent) and 18 ranked themselves as 4 (Good), and 2 ranked themselves as a 3 (average) on mastery of program objective 2	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 instructional changes anticipated.	
	2b. BIOL-4801, Biology Research Methods II, research project paper of respective research findings.	2b. 80% of students will earn a grade of "B" on the written paper for BIOL 4801. Grade assigned by instructor and mentor.	2b. All students in BIOL 4801 Fall 2012 and Spring 2013.	2b. 40	2b. 100 % of students completing Research Methods II in Fall and Spring 2013-2014 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.	2b. Y
	2c. BIOL-4801, Biology Research Methods II, oral presentation of respective research findings.	2c. 80% of students will earn a grade of "B" on the presentation for BIOL 4801. Grade assigned by Biology (Biology to replace 'science') Faculty.	2c. All students in BIOL 4801 Fall 2012 and Spring 2013.	2c. 40	2c. 100 % of students completing Research Methods II in Fall and Spring 2012/2013 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.	2c. Y
3. Demonstrate knowledge of	3. A laboratory exercise and	3. 100% of the students in Biol.	3. All students in majors biology	3. 418	3. Out of the 418 students only 20 were required to repeat the	3. Although our goal was achieved and students are	3. 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)
safety protocols.	worksheet will be administered to all students in Biol. 1144	1144L will complete and pass the worksheet over 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.	course (Bio. 1144L) will be sampled in Fall 2013/Spring 2014		exercise, upon which they received a passing grade.	learning proper laboratory safety, the coordination and implementation of this process has proved challenging because of the number of adjuncts teaching the labs. To improve implementation, we are in the process of hiring a laboratory coordinator and are planning on revising this exercise to include a written quiz over laboratory safety. This laboratory coordinator will develop this quiz and oversee that both the exercise and quiz are properly administered to all students and the results are given to the Head of the Biology Department for distribution for this assessment.	
4. To be adequately prepared for transition into a productive professional career.	4a.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	4a. 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,	4a.The Biology Faculty will administer a post-graduate survey by e-mail or phone asking about their transition from RSU into post-graduate endeavors (job, internship,	4a. 12	4a. Of the twelve surveys sent, we had only four responses. Two out of four responses as 4 or better on the Likert scale, a result of only 50%. The other two responses indicated a score of 3 on the Likert scale. However all four responded with a 5 on the Likert scale that they would recommend our program to other students.	4a. Even though we have received positive feedback from the 5 respondents, the return of only 5 responses out of 34 is not large enough to be statistically significant and makes it difficult if not impossible to assess the effectiveness of our program. Due to the low number of responses over the last 3 years, we are considering dropping	4a. 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)
	post-graduate endeavors (job, internship, graduate school, professional school).	internship, graduate school, professional school).	graduate school, professional school).			this method in measuring this outcome.	
	4b. The Biology Faculty will administer a survey to collect students' activities post-graduation.	4b. 80% of reporting students are working or continuing education in biology. 50% are in graduate or professional school.	4b. Biology faculty will administer a survey to collect information about student's activities post-graduation.	4b.182	4b. Since May 2003 we have had 202 students graduate with BS in Biology. Of these 202 students when have been able to track 88 graduates. These 182 graduates have been placed in the following; 34 Medical School (D.O and M.D.) 3 Chiropractic 2 Podiatry 33 Pharmacy 14 Graduate school 10 Physician Assistant Program 1 Optometry 3 Physical Therapy 2 Occupational Therapy 2 Emergency Medical Technician 6 Registered Nursing 2 Dental hygiene 4 Medical Laboratory Science 11 Wildlife-related jobs 5 School teachers 39 Science related (indus-	4b.This data suggest 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%.	4b. 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)
					try/hospitals/labs) 5 Veterinary Medicine 6 Dentistry school		

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.	1c. Development of a new Medical/Molecular course, Molecular Laboratory Techniques and modification of the Medical/Molecular degree plan.	1c. This is designed to improve our student learning outcomes, as demonstrated by the ETS sub-scores. We have determined that there is a need for a molecular biology techniques course. The discussion led to a decision to develop the course and accompanying Medical/Molecular degree plan modifications. In this current year, 2014-2015, we have continued this discussion and will complete the proposal. With approval of the Regents, we expect to add the course and degree plan changes during the 2015-2016 year.	1c. The degree option change we will propose will remove 1 (of 12) hours from the selected electives and the removal of one hour from BIOL 3504, Molecular Cell Biology. The Molecular Biology Techniques Laboratory Course will be a 2 hour course, and these changes will ensure that the degree plan retains the same number of required hours. This will impact the budget since the new course will require one more hour of lab.
3. Demonstrate knowledge of safety protocols.	3. To improve implementation, we are in the process of hiring a laboratory coordinator and are planning on revising	3. The coordination and implementation of this assessment has proved challenging because of the number of	3. Hiring of a new laboratory coordinator will impact the budget since this is already a line item in the budget.

Student Learning Outcomes	Instructional or Assessment Changes	Rationale for Changes	Impact of Planned Changes on Student Learning and Other Considerations.
	this exercise to include a written quiz over laboratory safety. This laboratory coordinator will develop this quiz and oversee that both the exercise and quiz are properly administered to all students and the results are given to the Head of the Biology Department.	adjuncts teaching the labs.	

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	Collected data, analyzed data, prepared report, & Reviewed report	24 Sep 2014
Mrs. Claudia Glass	Reviewed report	Claudia Glass
Mr. Don Glass	Collected data, Analyzed data, Prepared report, & reviewed report	Don Glass
Dr. Sue Katz Anburn	Collected data, Analyzed data, Prepared report, & reviewed report	Sue Kat Anburn
Dr. Jae-Ho Kim	Reviewed report	Not available - out of country
Dr. Eric Lee	Collected data, Analyzed data, Prepared report, & reviewed report	
Dr. Adele Register	Reviewed report	Adele Register
Dr. Craig Zimmerman	Reviewed report	Craig Zimmerman
Dr. Jin Soe	Reviewed report	

2) Reviewed by:

Titles	Names	Signatures	Date
Department Head	Dr. Jerry Bowen		24 Sep 2014
Dean	Dr. Keith Martin	Keith W Martin	9/25/2014

Appendix A:

ETS Subset Distribution

	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 5% of National Mean	19	22	19	21
Number of students within 10% of National Mean	4	0	3	3
Number of students Below 10% of National Mean	20	21	21	19
Total	43	43	43	43