General Education Student Learning Report (rev. 7/15)

Fall 2017 – Spring 2018

Department of Biology

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.

Relationship of Degree Program Learning Outcomes to Departmental and University Missions

RSU Mission	**General Education 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	General Education at Rogers State University provides a broad foundation of intellectual skills, knowledge, and perspectives to enable students across the University to achieve professional and personal goals in a dynamic local or global society.
RSU Commitments	**General Education 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.	1) Think critically and creatively. 2) Acquire, analyze, and evaluate knowledge of human cultures and the physical and natural world. 3) Use written, oral, and visual communication effectively. 4) Develop an individual perspective on the human experience, and demonstrate an understanding of diverse perspectives and values. 5) Demonstrate civic knowledge and engagement, ethical reasoning, and skills for lifelong learning.

RSU Mission	General Education Mission
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.	
To provide a general liberal arts education that supports specialized academic programs and prepares students for lifelong learning and service in a diverse society.	1) Think critically and creatively. 2) Acquire, analyze, and evaluate knowledge of human cultures and the physical and natural world. 3) Use written, oral, and visual communication effectively. 4) Develop an individual perspective on the human experience, and demonstrate an understanding of diverse perspectives and values. 5) Demonstrate civic knowledge and engagement, ethical reasoning, and skills for lifelong learning.
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.	

PART 1

Discussion of Instructional Changes Resulting from 2014-2015 General Education Student Learning Report

List and discuss all instructional or assessment changes proposed in Part 4 of last year's General Education 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 Curriculum or Budget
A new common lab book has been adopted to use in sections of both BIOL 1114 and BIOL 1144.	Y	A lab component traditionally accounts for 25% or more of an overall course grade in science. It is hoped a more a rigorous lab curriculum will improve student learning in the lecture components.

PART 2

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

[Complete this part only if the general education course(s) was among those that were peer reviewed last year.] 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
General Education courses are now reviewed by the General Education Committee. No specific comments on the biology reports were provided by the GEC last cycle.		

PART 3

Analysis of Evidence of Student Learning Outcomes

The five General Education Outcomes are listed below. For each outcome, indicate the General Education courses being assessed, and provide a brief narrative of 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 any relevant conclusions related to strengths and weaknesses of their performance. Finally, indicate whether the performance measure was met or not.

OUTCOME 1: Think critically and creatively

A. Course	B. Assessment Measures	C. Performance Standards	D. Sampling Methods	E. Sample Size (N)	F. Results	G. Conclusions	H. Performance Standards Met (Y/N)
BIOL 1114: General Biology	Science Literacy Quiz Comprises a 15-question multiple choice quiz on principles of science & the scientific method. This quiz is given in our lab sections.	70% of students will score 70% or above.	Given to all enrolled students in Fall & Spring terms.	192	This table summarizes for student scores. **Score Distribution** 0-49% 23 50-59% 13 60-69% 48 70-79% 24 80-89% 62 90-100% 22 **Average:** 71.2%	The average score was 71%. 56% (108 of 192) scored ≥70%. These results indicate a sharp drop in student performance over the five years. This is the first time over this period that this measure was not met. This quiz is administered at the end of the semester in our lab sections for this course. It was noted by Dr. Zimmermann that one of the adjunct lab instructors repeatedly made comments to the students in her spring sections that may have undermined the validity of the quiz. The overall average for her three spring sections	N

A. Course	B. Assessment Measures	C. Performance Standards	D. Sampling Methods	E. Sample Size (N)	F. Results	G. Conclusions	H. Performance Standards Met (Y/N)
						was 65%, well below the overall average of 75% in the fall. When this instructor's data is removed, the overall average jumped to 74% with 66% of students meeting the performance standard. While still below expectations, this would have only been slightly below last years. Below are data for the last assessment cycles. Shown are the average score and percentage that met the standard. 2017-18 71.3 56% 2016-17 74.8 70% 2015-16 77.6 73% 2014-15 77.7 75% 2013-14 78.2 75% 2012-13 70.8 55% 2011-12 69.5 56%	
BIOL 1144: General Cell Biology	Science Literacy Quiz Comprises a 15-question multiple choice assessment on the	70% of students will score 70% or above.	Given to all enrolled students in Fall & Spring terms.	276	This table summarizes student scores. **Score Distribution** 0-49% 13 50-59% 14 60-69% 46 70-79% 44 80-89% 98	The average score was 77.4%. 74% (203 of 276) scored ≥70%. Below are assessment data for the recent cycles. While slightly lower than the previous two years,	Y

A. Course	B. Assessment Measures	C. Performance Standards	D. Sampling Methods	E. Sample Size (N)	F. Results	G. Conclusions	H. Performance Standards Met (Y/N)
	principles of science and the scientific method. This quiz is given in our lab sections.				90-100% 61 **Average:** 77.4%	these results are still strong. This shows students are developing critical and creative thinking skills. Shown are the average score and percentage that met the standard. 2017-18 77.4 74% 2016-17 78.7 75% 2015-16 79.8 82% 2014-15 77.1 70% 2013-14 82.0 73% 2012-13 76.0 70% 2011-12 74.0 65%	

OUTCOME 2: Acquire, analyze, and evaluate knowledge of human cultures and the physical and natural world.

A. Course	B. Assessment Measures	C. Performance Standards	D. Sampling Methods	E. Sample Size (N)	F. Results	G. Conclusions	H. Performance Standards Met (Y/N)
BIOL 1114: General Biology	Comprehensive Pre-Post Exam 50 multiple-choice question exam on basic concepts of biology. Administered on first day of lecture class	70% of students will score 70% or above.	Given to all enrolled students in Fall & Spring terms.	145	This table summarizes student scores. **Score Distribution** 0-49% 13 50-59% 25 60-69% 38 70-79% 35 80-89% 22 90-100% 11 **Average:** 68.1%	The average score was 68%. A total of only 47% of students met the standard of scoring 70% or higher. While we failed to meet the desired standard, this is the second highest numbers we have seen on this measure since we	N

A. Course	B. Assessment Measures	C. Performance Standards	D. Sampling Methods	E. Sample Size (N)	F. Results	G. Conclusions	H. Performance Standards Met (Y/N)
	and at the time of final exam. We consider two results: 1) post test scores, and 2) the difference in pre-post test scores. Here, we discuss the post-test score results. Change in pre-post scores is discussed in next section.					adopted it. Below are assessment data for the recent cycles. Shown are the average score and percentage that met the standard. 2017-18 68.1 47% 2016-17 70.9 58% 2015-16 64.4 35% 2014-15 67.7 48% 2013-14 63.3 37% 2012-13 66.0 44%	
BIOL 1114: General Biology	Comprehensive Pre-Post Exam 50 multiple-choice question exam on basic concepts of biology. Administered on first day of lecture class and at the time of final exam. We consider	70% of students will improve on the post-test by 20% or greater over the pre-test.	Given to all enrolled students in Fall & Spring terms.	142	This frequency table summarizes the change in student scores for the pre & post test scores. **Score Distribution** (Post Test Improvement) 0-10% 14 10-20% 33 20-30% 37 30-40% 34 40-50% 20 50-60% 3 60-70% 1 **Average gain:** 25.6	Mean improvement was 26 percentage points. 74% (95 of 142) of students improved their score by 20 percentage points or more. While we saw a slight decline in scores since last year, this is the third time we have met the standard since starting this measure in 2009. The 74% success rate is also the second highest over this time period.	Y

A. Course	B. Assessment Measures	C. Performance Standards	D. Sampling Methods	E. Sample Size (N)	F. Results	G. Conclusions	H. Performance Standards Met (Y/N)
	two results: 1) post test scores, and 2) the difference in pre-post test scores Here, we discuss the change between pre and pre-post test scores.					This indicates that our students are able to acquire and evaluate knowledge of the natural world. Below are assessment data for the recent cycles. Shown are the average score improvement and percentage that met the standard. 2017-18 25.6 74% 2016-17 30.0 81% 2015-16 21.7 58% 2014-15 26.0 72% 2013-14 23.0 63% 2012-13 23.0 65% 2011-12 21.0 56%	
BIOL 1114R: General Biology (Online)	Comprehensive Final Exam Comprehensive review of topics covered over the entire term. Includes short answer, essay, and multiple-choice questions.	70% of students will score 70% or above.	Given to all enrolled students in Fall & Spring terms.	94	This frequency table summarizes student scores. **Score Distribution** 0-49% 0 50-59% 3 60-69% 5 70-79% 10 80-89% 41 90-100% 35 **Average:** 85.2%	The average score was 85%. 92% (86 of 94) scored ≥70%. This shows students are demonstrating the ability to acquire and analyze knowledge of the physical and natural world. Below are assessment data for the recent cycles. Shown are the average score and percentage that	Y

A. Course	B. Assessment Measures	C. Performance Standards	D. Sampling Methods	E. Sample Size (N)	F. Results	G. Conclusions	H. Performance Standards Met (Y/N)
						met the standard. 2017-18 85.0 92% 2016-17 86.0 90% 2015-16 79.1 84% 2014-15 79.2 86% 2013-14 83.8 95% 2012-13 75.0 79% 2011-12 71.0 50% Student progress in this online course has been much higher than the on-ground course. Online sections have been taught by a regular adjunct instructor, so there may be differences in the course rigor. Also, a comprehensive final exam is used for assessing student learning rather than the standardized pre-post assessment exam. Thus differences in the student scores may also reflect a difference in test difficulty.	
BIOL 1144: General Cell Biology	Comprehensive Pre-Post Exam 50 multiple-choice question exam on basic concepts of biology.	70% of students will score 70% or above.	Given to all enrolled students in Fall & Spring terms.	275	This frequency table summarizes student scores.	The average score was 66%. 45% (117 of 275) scored ≥70%. Students continue fail to meet our desired goal for	N

A. Course	B. Assessment Measures	C. Performance Standards	D. Sampling Methods	E. Sample Size (N)	F. Results	G. Conclusions	H. Performance Standards Met (Y/N)
	Administered on first day of lecture class and at the time of final exam. We consider two results: 1) post test scores, and 2) the difference in pre-post test scores. Here, we discuss the post-test score results. Change in pre-post scores is discussed in next section.				**Score Distribution** 0-49% 39 50-59% 47 60-69% 59 70-79% 54 80-89% 44 90-100% 19 **Average:** 66.4%	this measure. The majority of students taking this course are in pre-nursing, not biology. The course is also designed as a course for biology majors and is substantially more difficult than BIOL General Biology. These student are often not strong in science. Also, many hoping to enter the nursing program are nontraditional students who are often returning to school after a long absence. Many of these students, therefore, find this to be a challenging course. Below are assessment data for the recent cycles. Shown are the average score on the post-test and the percentage of students that met the standard. 2017-18 66.4 45% 2016-17 65.0 40% 2015-16 66.3 44%	

A. Course	B. Assessment Measures	C. Performance Standards	D. Sampling Methods	E. Sample Size (N)	F. Results	G. Conclusions	H. Performance Standards Met (Y/N)
						2014-15 69.0 55% 2013-14 63.0 40% s012-13 68.0 48%	
BIOL 1144: General Cell Biology	Comprehensive Pre-Post Exam 50 multiple-choice question exam on basic concepts of biology. Administered on first day of lecture class and at the time of final exam. We consider two results: 1) post test scores, and 2) the difference in pre-post test scores Here, we discuss the change between pre and pre-post test scores.	70% of students will improve on the post-test by 20% or greater over the pre-test.	Given to all enrolled students in Fall & Spring terms.	251	This frequency table summarizes student scores. **Score Distribution** (Post Test Improvement) 0-10% 40 10-20% 43 20-30% 64 30-40% 59 40-50% 25 50-60% 15 60-70% 5 **Average gain:** 24.5	Mean improvement was 26 percentage points. 67% (168 of 251) of students improved their score by ≥20%. This falls a little short of our desired standard of 70%, but does show a sharp increase over last year (61%). As in the past, however, a much larger percentage of the student population are meeting this standard vs the post-test score measure with the same test (67% vs 45%). This finding is consistent with past results in that many students do not meet the desired standard on the post-test score, but do perform reasonably well on improving on their pre-test score. This indicates a student population that has a poor	N

A. Course	B. Assessment Measures	C. Performance Standards	D. Sampling Methods	E. Sample Size (N)	F. Results	G. Conclusions	H. Performance Standards Met (Y/N)
						aptitude for science entering into college and require more than a single course to get them to college level material. Below are assessment data for the recent cycles. They show the average improvement over the pretest score and the percentage of students that met the standard. 2016-17 25.8 67% 2016-17 24.5 61% 2015-16 26.5 67% 2014-15 29.0 75% 2013-14 25.0 59% 2012-13 29.0 75% 2011-12 27.0 68%	
BIOL 1134: General Environmental Biology	Comprehensive Final Exam Multiple-choice comprehensive exam of the concepts covered during the semester.	70% of students will score 70% or higher.	Given to all enrolled students in the Fall & Spring terms	39	This frequency table summarizes student scores.	The average test score was 76%. 74% (29 of 39) scored ≥70%. Students have met the standard for this measure for the last five years. This indicates that students are adequately demonstrating an ability	Y

A. Course	B. Assessment Measures	C. Performance Standards	D. Sampling Methods	E. Sample Size (N)	F. Results	G. Conclusions	H. Performance Standards Met (Y/N)
					Score Distribution 0-49% 2 50-59% 0 60-69% 8 70-79% 10 80-89% 14 90-100% 5 **Average:** 75.7%	to acquire and analyze knowledge about the natural world. Below are assessment data from the last cycles. Shown are the average test score and the percentage of students that met the standard. 2017-18 75.6 74% 2016-17 80.0 82% 2015-16 80.7 70% 2014-15 77.2 70% 2013-14: 76.1 78% 2012-13: 74.5 69% 2011-12: 69.0 39%	
BIOL 1134R: General Environmental Biology (Online)	Final Exam or Average of Unit Exams	70% of students will score 70% or above.	Given to all enrolled students in online sections	41	This frequency table summarizes student scores. **Score Distribution** 0-49% 2 50-59% 1 60-69% 3 70-79% 11 80-89% 19 90-100% 5 **Average:** 78.1%	The average test score was 78%. 85% (35 of 41) scored ≥70%. These are the highest scores we have seen in this course in over five years. This indicates that students are adequately demonstrating an ability to acquire and analyze knowledge about the	Y

A. Course	B. Assessment Measures	C. Performance Standards	D. Sampling Methods	E. Sample Size (N)	F. Results	G. Conclusions	H. Performance Standards Met (Y/N)
						natural world. Below are assessment data from the last cycles. Shown are the average test score and the percentage of students that met the standard. 2017-18 78.1 85% 2016-17 No data 2015-16 75.0 77% 2014-15 76 .0 85% 2013-14 No data 2012-13 72.0 57%	

OUTCOME 3: Use written, oral, and visual communication effectively.

A. Course	B. Assessment Measures	C. Performance Standards	D. Sampling Methods	E. Sample Size (N)	F. Results	G. Conclusions	H. Performance Standards Met (Y/N)
BIOL 3103: Plants and Civilization	Written Paper This term students presented their research as a poster for the whole class.	70% of students will score 70% or higher.	Given to all enrolled students in the semester.	20	This frequency table summarizes student scores. **Score Distribution** 0-49% 0 50-59% 0 60-69% 1 70-79% 0 80-89% 4 90-100% 15 **Average:** 91.5%	The average test score was 92%. 100% (19 of 20) of students scored ≥70%. Students met the desired standard for this measure. This evidence shows students are meeting the goal of effective written and visual communication.	Y

OUTCOME 4: Develop an individual perspective on the human experience, and demonstrate an understanding of diverse perspectives and values.

A. Course	B. Assessment Measures	C. Performance Standards	D. Sampling Methods	E. Sample Size (N)	F. Results	G. Conclusions	H. Performance Standards Met (Y/N)
BIOL 3103: Plants and Civilization	Comprehensive Final Exam	70% of students will score 70% or higher.	Given to all enrolled students in the semester.	20	This frequency table summarizes student scores.	The average test score was 86%. 95% (19 of 20) of students scored ≥70%. These results meet our desired standard.	Y

A. Course	B. Assessment Measures	C. Performance Standards	D. Sampling Methods	E. Sample Size (N)	F. Results	G. Conclusions	H. Performance Standards Met (Y/N)
					Score Distribution 0-49% 0 50-59% 0 60-69% 1 70-79% 3 80-89% 9 90-100% 7 **Average:** 86.1%	This evidence shows our students are meeting the goal of developing an understanding of the human experience.	

OUTCOME 5: Demonstrate civic knowledge and engagement, ethical reasoning, and skills for lifelong learning.

A. Course	B. Assessment Measures	C. Performance Standards	D. Sampling Methods	E. Sample Size (N)	F. Results	G. Conclusions	H. Performance Standards Met (Y/N)
N/A							

PART 4

Proposed Instructional Changes Based on Conclusions Drawn from Evidence Presented Above

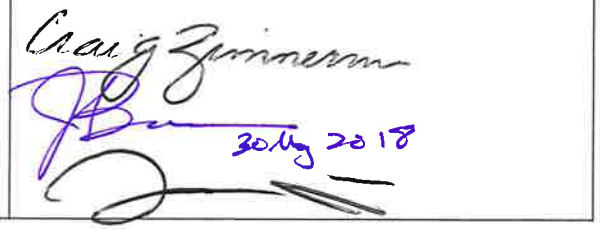
State any proposed instructional or assessment changes to be implemented for the next academic year. They should be based on conclusions reported in Part 3 (above) or on informal activities, such as faculty meetings and discussions, conferences, pilot projects, textbook adoption, new course proposals, 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."

General Education Outcomes	Instructional or Assessment Changes	Rationale for Changes	Impact of Planned Changes on Student Learning and Other Considerations.
SLO #1-5	Hire a full-time instructor to coordinate freshman labs and teach lab sections.	Assist lab organization and preparation, create consistency in content and rigor, and relieve need for adjunct instructors.	The lab component typically counts for 1 credit hour of a 4 credit hour course. It is a hands-on approach that expands and reinforces concepts learned in lecture. A full-time position should help to improve the quality of our lab sections and help develop student learning.

PART 6 (A & B)

Documentation of Faculty Participation and Review

A. 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
Full-time Faculty Craig Zimmermann	Provided data, analyzed data, prepared report	
Jerry Bowen	Provided data and reviewed report	
Jin Seo	Provided data and reviewed report	

Don Glass	Provided data and reviewed report	Don Glass
Claudia Glass	Provided data and reviewed report	Claudia Glass
Lisa Overall	Provided data and reviewed report	Unavailable.
Jae-Ho Kim	Reviewed report	Unavailable
Sue Kat Adjunct Faculty		Sue Kat
Janette Tuckey	Provided data	
Rance Kingfisher	Provided data	
Jan First	Provided data	
Gifty Benson	Provided data	

B. Reviewed by:

Titles	Names	Signatures	Date
Department Head	Jerry Bowen	Jerry Bowen	30 May 2018
Dean	Keith Martin	Keith N. Mart	5/30/18