

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

Fall 2020 – Spring 2021

## 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
<p>Our mission is to ensure students develop the skills and knowledge required to achieve professional and personal goals in dynamic local and global communities</p>	<p>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.</p>
<p><b>RSU Commitments</b></p> <p>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.</p>	<p><b>General Education Outcomes</b></p> <ol style="list-style-type: none"> <li>1) Think critically and creatively.</li> <li>2) Acquire, analyze, and evaluate knowledge of human cultures and the physical and natural world.</li> <li>3) Use written, oral, and visual communication effectively.</li> <li>4) Develop an individual perspective on the human experience, and demonstrate an understanding of diverse perspectives and values.</li> <li>5) Demonstrate civic knowledge and engagement, ethical reasoning, and skills for lifelong learning.</li> </ol>
<p>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.</p> <p>To provide a general liberal arts education that supports specialized academic programs and prepares students for lifelong learning and service in a diverse society.</p>	<ol style="list-style-type: none"> <li>1) Think critically and creatively.</li> <li>2) Acquire, analyze, and evaluate knowledge of human cultures and the physical and natural world.</li> <li>3) Use written, oral, and visual communication effectively.</li> <li>4) Develop an individual perspective on the human experience, and demonstrate an understanding of diverse perspectives and values.</li> <li>5) Demonstrate civic knowledge and engagement, ethical reasoning,</li> </ol>

RSU Mission	General Education Mission
To provide students with a diverse, innovative faculty dedicated to excellence in teaching, scholarly pursuits, and continuous improvement of programs.	and skills for lifelong learning.
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 2018-2019 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
BIOL 1114. Dr. Overall wants to integrate online exercises from the McGraw-Hill CONNECT learning platform into the graded curriculum for her sections.	Y	The instructor reports that the exercises were well-received by the students.
BIOL 1134. Dr. Overall wants to integrate online exercises from the Cengage MINDTAP learning platform into the graded curriculum for her sections.	Y	The instructor reports that the exercises were well-received by the students.
BIOL 1144. Dr. Overall wants to integrate online exercises from the Pearson MASTERING BIOLOGY learning platform into the graded curriculum for her sections.	Y	The instructor reports that the exercises were well-received by the students.

Weekly lab meetings will be held for all lab instructors. Applies to lab sections of BIOL 1114/1144.	Y	Such meetings are very productive for instructors. They help work out common problems and insure consistency in rigor and content across instructors. We rely heavily on adjuncts for these lab sections.
Instructor manual is being compiled for assist adjuncts with lab set up, grading, and assessment. Applies to lab sections of BIOL 1114/1144.	Y	Like the weekly meetings, the manual is designed to help instructors set up and carry out the weekly exercises. We often have one or more new adjunct instructors every year, so the manual offers a useful reference for dealing with housekeeping issues associated with these exercises.
Lab curriculum redeveloped to include more science literacy and computer skills. Applies to lab sections of BIOL 1114/1144.	Y	Online component included more reading and interactive activities.
Online lab sections are going to be made more standardized between instructors with assessment questions. Applies to lab sections of BIOL 1114/1144.	Y	All exams, quizzes, and materials were highly standardized. All lab instructors used a pre-built course for greater consistency across sections.
Online lab sections are going to become hybridized with some take home labs that students can order and work at home. Applies to lab sections of BIOL 1114/1144.	N	The lab curriculum was highly affected by COVID restrictions on social distancing and class size. So, the incorporation of home labs has not be undertaken yet.

## PART 2

### Discussion of the University Assessment Committee's 2018-2019 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
No feedback provided.		

**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)																
<p><b>BIOL 1114:</b> General Biology</p>	<p>Science Literacy Quiz Comprises a 15-question multiple choice quiz on principles of science &amp; the scientific method. This quiz is given in our lab sections.</p>	<p>70% of students will score 70% or above.</p>	<p>Given to all enrolled students in Fall &amp; Spring terms.  This was not administered in Fall 2020. The literacy quiz is given with the lab final given in the last week of class. Due to COVID, all instruction was moved online during this week. We didn't risk the integrity of this test by putting it online.</p>	<p>68</p>	<p>This table summarizes for student scores.</p> <table border="1" data-bbox="722 735 958 1018"> <thead> <tr> <th colspan="2">Score Distribution</th> </tr> </thead> <tbody> <tr> <td>0-49%</td> <td>1</td> </tr> <tr> <td>50-59%</td> <td>3</td> </tr> <tr> <td>60-69%</td> <td>16</td> </tr> <tr> <td>70-79%</td> <td>14</td> </tr> <tr> <td>80-89%</td> <td>26</td> </tr> <tr> <td>90-100%</td> <td>8</td> </tr> <tr> <td><b>Average:</b></td> <td><b>76.7%</b></td> </tr> </tbody> </table>	Score Distribution		0-49%	1	50-59%	3	60-69%	16	70-79%	14	80-89%	26	90-100%	8	<b>Average:</b>	<b>76.7%</b>	<p>The average score was 76.7%. 71% (48 of 68) scored <math>\geq 70\%</math>. Below are average score and percentage that met the standard for the last seven years.  2020-21 76.7 71% 2019-20 76.9 72% 2018-19 78.2 75% 2017-18 71.3 56% 2016-17 74.8 70% 2015-16 77.6 73% 2014-15 77.7 75%</p> <p>Student performance has met the standard in six of the last seven years. Student numbers for this assessment have been fairly stable over this period with 70-75% of students reaching the standard in any given year.</p>	<p>N</p>
Score Distribution																							
0-49%	1																						
50-59%	3																						
60-69%	16																						
70-79%	14																						
80-89%	26																						
90-100%	8																						
<b>Average:</b>	<b>76.7%</b>																						

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)																																					
<b>BIOL 1144:</b> General Cell Biology	Science Literacy Quiz Comprises a 15-question multiple choice assessment on the principles of science and 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. This was not administered in Fall 2020. The literacy quiz is given with the lab final given in the last week of class. Due to COVID, all instruction was moved online during this week. We didn't risk the integrity of this test by putting it online.	84	This table summarizes student scores. <table border="1" data-bbox="560 724 787 1018"> <thead> <tr> <th colspan="2">Score Distribution</th> </tr> </thead> <tbody> <tr> <td>0-49%</td> <td>1</td> </tr> <tr> <td>50-59%</td> <td>3</td> </tr> <tr> <td>60-69%</td> <td>13</td> </tr> <tr> <td>70-79%</td> <td>18</td> </tr> <tr> <td>80-89%</td> <td>30</td> </tr> <tr> <td>90-100%</td> <td>19</td> </tr> <tr> <td><b>Average:</b></td> <td><b>79.5%</b></td> </tr> </tbody> </table>	Score Distribution		0-49%	1	50-59%	3	60-69%	13	70-79%	18	80-89%	30	90-100%	19	<b>Average:</b>	<b>79.5%</b>	This demonstrates that students can apply critical thinking in evaluating scientific evidence. The average score was 79.5%. 80% (67 of 84) scored $\geq 70\%$ . Below are average score and percentage that met the standard for the last seven years. <table border="1" data-bbox="722 420 909 672"> <tbody> <tr> <td>2020-21</td> <td>79.5</td> <td>80%</td> </tr> <tr> <td>2019-20</td> <td>76.5</td> <td>77%</td> </tr> <tr> <td>2018-19</td> <td>76.8</td> <td>76%</td> </tr> <tr> <td>2017-18</td> <td>77.4</td> <td>74%</td> </tr> <tr> <td>2016-17</td> <td>78.7</td> <td>75%</td> </tr> <tr> <td>2015-16</td> <td>79.8</td> <td>82%</td> </tr> <tr> <td>2014-15</td> <td>77.1</td> <td>70%</td> </tr> </tbody> </table> Students have met the standard in all of the last seven years. 80% of students met the standard in this cycle. This is only the second time this has been reached in this seven-year period. This demonstrates that students can apply critical thinking in evaluating scientific evidence.	2020-21	79.5	80%	2019-20	76.5	77%	2018-19	76.8	76%	2017-18	77.4	74%	2016-17	78.7	75%	2015-16	79.8	82%	2014-15	77.1	70%	Y
Score Distribution																																												
0-49%	1																																											
50-59%	3																																											
60-69%	13																																											
70-79%	18																																											
80-89%	30																																											
90-100%	19																																											
<b>Average:</b>	<b>79.5%</b>																																											
2020-21	79.5	80%																																										
2019-20	76.5	77%																																										
2018-19	76.8	76%																																										
2017-18	77.4	74%																																										
2016-17	78.7	75%																																										
2015-16	79.8	82%																																										
2014-15	77.1	70%																																										

**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)																																					
<p><b>BIOL 1114:</b> General Biology</p>	<p>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 post-test score results. Change in pre-post scores is discussed in next section.</p>	<p>70% of students will score 70% or above.</p>	<p>Given to all enrolled students in Fall &amp; Spring terms. This was not administered in Fall 2020. Final exams in this term were given online due to COVID. Faculty did not want to corrupt the integrity of this test by putting it online.</p>	<p>96</p>	<p>This table summarizes student scores.</p> <table border="1" data-bbox="435 730 683 989"> <thead> <tr> <th colspan="2">Score Distribution</th> </tr> </thead> <tbody> <tr> <td>0-49%</td> <td>6</td> </tr> <tr> <td>50-59%</td> <td>11</td> </tr> <tr> <td>60-69%</td> <td>20</td> </tr> <tr> <td>70-79%</td> <td>20</td> </tr> <tr> <td>80-89%</td> <td>27</td> </tr> <tr> <td>90-100%</td> <td>12</td> </tr> <tr> <td><b>Average:</b></td> <td><b>72.6%</b></td> </tr> </tbody> </table>	Score Distribution		0-49%	6	50-59%	11	60-69%	20	70-79%	20	80-89%	27	90-100%	12	<b>Average:</b>	<b>72.6%</b>	<p>The average score was 72.6%. 62% (59 of 96) of students met the standard of scoring 70% or higher. Below are average score and percentage that met the standard for the last seven years.</p> <table border="1" data-bbox="662 411 850 663"> <tbody> <tr> <td>2020-21</td> <td>72.6</td> <td>62%</td> </tr> <tr> <td>2019-20</td> <td>76.9</td> <td>73%</td> </tr> <tr> <td>2018-19</td> <td>67.4</td> <td>48%</td> </tr> <tr> <td>2017-18</td> <td>68.1</td> <td>47%</td> </tr> <tr> <td>2016-17</td> <td>70.9</td> <td>58%</td> </tr> <tr> <td>2015-16</td> <td>64.4</td> <td>35%</td> </tr> <tr> <td>2014-15</td> <td>67.7</td> <td>48%</td> </tr> </tbody> </table>	2020-21	72.6	62%	2019-20	76.9	73%	2018-19	67.4	48%	2017-18	68.1	47%	2016-17	70.9	58%	2015-16	64.4	35%	2014-15	67.7	48%	<p>N</p>
Score Distribution																																												
0-49%	6																																											
50-59%	11																																											
60-69%	20																																											
70-79%	20																																											
80-89%	27																																											
90-100%	12																																											
<b>Average:</b>	<b>72.6%</b>																																											
2020-21	72.6	62%																																										
2019-20	76.9	73%																																										
2018-19	67.4	48%																																										
2017-18	68.1	47%																																										
2016-17	70.9	58%																																										
2015-16	64.4	35%																																										
2014-15	67.7	48%																																										
<p>While we failed to meet the standard this year, student scores for this assessment were the second highest in the last seven years. The department has several new hires in recent years. We also have made some large changes in the content of the lab curriculum over the same period. These may be responsible for the upward trend in these numbers.</p>																																												

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)																																						
<b>BIOL 1114:</b> 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 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. This was not administered in Fall 2020. Final exams in this term were given online due to COVID. Faculty did not want to corrupt the integrity of this test by putting it online	93	This table summarizes the change in student scores for the pre & post test scores. <table border="1" data-bbox="438 735 763 1008"> <thead> <tr> <th colspan="2">Score Distribution</th> </tr> <tr> <th colspan="2">(Post Test Improvement)</th> </tr> </thead> <tbody> <tr> <td>0-10%</td> <td>2</td> </tr> <tr> <td>10-20%</td> <td>14</td> </tr> <tr> <td>20-30%</td> <td>25</td> </tr> <tr> <td>30-40%</td> <td>33</td> </tr> <tr> <td>40-50%</td> <td>9</td> </tr> <tr> <td>50-60%</td> <td>4</td> </tr> <tr> <td>60-70%</td> <td>6</td> </tr> <tr> <td><b>Average gain:</b></td> <td><b>32.2</b></td> </tr> </tbody> </table>	Score Distribution		(Post Test Improvement)		0-10%	2	10-20%	14	20-30%	25	30-40%	33	40-50%	9	50-60%	4	60-70%	6	<b>Average gain:</b>	<b>32.2</b>	Mean improvement was 32.2 percentage points. 84.6% (77 of 93) of students improved their score by 20 percentage points or more. Below are the average score improvement and percentage that met the standard for the last six years. <table border="1" data-bbox="633 399 812 672"> <tbody> <tr> <td>2020-21</td> <td>32.2</td> <td>85%</td> </tr> <tr> <td>2019-20</td> <td>37.2</td> <td>90%</td> </tr> <tr> <td>2018-19</td> <td>29.1</td> <td>70%</td> </tr> <tr> <td>2017-18</td> <td>25.6</td> <td>74%</td> </tr> <tr> <td>2016-17</td> <td>30.0</td> <td>81%</td> </tr> <tr> <td>2015-16</td> <td>21.7</td> <td>58%</td> </tr> </tbody> </table> Students have met the standard in the five of the last six years. There is upward trend in performance in this measure over the last two years. How much of this is due to changes in test administration due to COVID is not clear. Nonetheless, students perform better on this measure as compared to just an analysis of post test scores. In terms of a "value-added", students are markedly improving their understanding of biology relative to that at the start of the course.	2020-21	32.2	85%	2019-20	37.2	90%	2018-19	29.1	70%	2017-18	25.6	74%	2016-17	30.0	81%	2015-16	21.7	58%	Y
Score Distribution																																													
(Post Test Improvement)																																													
0-10%	2																																												
10-20%	14																																												
20-30%	25																																												
30-40%	33																																												
40-50%	9																																												
50-60%	4																																												
60-70%	6																																												
<b>Average gain:</b>	<b>32.2</b>																																												
2020-21	32.2	85%																																											
2019-20	37.2	90%																																											
2018-19	29.1	70%																																											
2017-18	25.6	74%																																											
2016-17	30.0	81%																																											
2015-16	21.7	58%																																											

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 1114R: General Biology (Online)	Comprehensive Final Exam Comprehensive review of topics covered over the entire term.	70% of students will score 70% or above.	Given to all enrolled students in Fall & Spring terms.	107	<p>This frequency table summarizes student scores.</p> <table border="1" data-bbox="435 722 662 1003"> <thead> <tr> <th colspan="2">Score Distribution</th> </tr> </thead> <tbody> <tr> <td>0-49%</td> <td>1</td> </tr> <tr> <td>50-59%</td> <td>1</td> </tr> <tr> <td>60-69%</td> <td>1</td> </tr> <tr> <td>70-79%</td> <td>14</td> </tr> <tr> <td>80-89%</td> <td>34</td> </tr> <tr> <td>90-100%</td> <td>56</td> </tr> <tr> <td><b>Average:</b></td> <td>89.5%</td> </tr> </tbody> </table>	Score Distribution		0-49%	1	50-59%	1	60-69%	1	70-79%	14	80-89%	34	90-100%	56	<b>Average:</b>	89.5%	<p>The average score was 89.5%. 97.2% (104 of 107) scored <math>\geq 70\%</math>. Below are exam averages and percentage that met the standard for the last six years.</p> <table border="1" data-bbox="574 428 766 655"> <tbody> <tr> <td>2020-21</td> <td>89.5</td> <td>97%</td> </tr> <tr> <td>2019-20</td> <td>91.5</td> <td>96%</td> </tr> <tr> <td>2018-19</td> <td>81.1</td> <td>91%</td> </tr> <tr> <td>2017-18</td> <td>85.0</td> <td>92%</td> </tr> <tr> <td>2016-17</td> <td>86.0</td> <td>90%</td> </tr> <tr> <td>2015-16</td> <td>79.1</td> <td>84%</td> </tr> <tr> <td>2014-15</td> <td>79.2</td> <td>86%</td> </tr> </tbody> </table> <p>Students have met the standard in the last six academic years. The exam average and the proportion of students scoring above 70% was notably higher in this academic year versus previous years.</p> <p>Student progress in this online course has been much higher than the on-ground course. This course has been routinely taught by an adjunct, so there may be differences in the course rigor. It is not known whether the instructor requires any proctoring for exams.</p>	2020-21	89.5	97%	2019-20	91.5	96%	2018-19	81.1	91%	2017-18	85.0	92%	2016-17	86.0	90%	2015-16	79.1	84%	2014-15	79.2	86%	Y
Score Distribution																																												
0-49%	1																																											
50-59%	1																																											
60-69%	1																																											
70-79%	14																																											
80-89%	34																																											
90-100%	56																																											
<b>Average:</b>	89.5%																																											
2020-21	89.5	97%																																										
2019-20	91.5	96%																																										
2018-19	81.1	91%																																										
2017-18	85.0	92%																																										
2016-17	86.0	90%																																										
2015-16	79.1	84%																																										
2014-15	79.2	86%																																										



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)																																									
<b>BIOL 1144:</b> 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.	48	This frequency table summarizes student scores.  <table border="1" data-bbox="422 724 747 997"> <thead> <tr> <th colspan="2">Score Distribution</th> </tr> <tr> <th colspan="2">(Post Test Improvement)</th> </tr> </thead> <tbody> <tr> <td>0-10%</td> <td>0</td> </tr> <tr> <td>10-20%</td> <td>3</td> </tr> <tr> <td>20-30%</td> <td>11</td> </tr> <tr> <td>30-40%</td> <td>10</td> </tr> <tr> <td>40-50%</td> <td>12</td> </tr> <tr> <td>50-60%</td> <td>9</td> </tr> <tr> <td>60-70%</td> <td>3</td> </tr> <tr> <td><b>Average gain:</b></td> <td><b>33.2</b></td> </tr> </tbody> </table>	Score Distribution		(Post Test Improvement)		0-10%	0	10-20%	3	20-30%	11	30-40%	10	40-50%	12	50-60%	9	60-70%	3	<b>Average gain:</b>	<b>33.2</b>	Mean improvement was 38.5 percentage points. 94% (45 of 48) of students improved their score by $\geq 20\%$ . Below are the average score improvement and percentage that met the standard for the last seven years. <table border="1" data-bbox="625 420 820 661"> <tbody> <tr> <td>2020-21</td> <td>33.1</td> <td>94%</td> </tr> <tr> <td>2019-20</td> <td>33.2</td> <td>77%</td> </tr> <tr> <td>2018-19</td> <td>28.5</td> <td>71%</td> </tr> <tr> <td>2017-18</td> <td>25.8</td> <td>67%</td> </tr> <tr> <td>2016-17</td> <td>24.5</td> <td>61%</td> </tr> <tr> <td>2015-16</td> <td>26.5</td> <td>67%</td> </tr> <tr> <td>2014-15</td> <td>29.0</td> <td>75%</td> </tr> </tbody> </table> We have seen an encouraging upward trend in performance in this measure over the last few years. How much of this is due to changes in test administration due to COVID is not clear. Nonetheless, students perform better on this measure as compared to just an analysis of post test scores. In terms of a "value-added", students are markedly improving their understanding of biology relative to that at the start of the course.	2020-21	33.1	94%	2019-20	33.2	77%	2018-19	28.5	71%	2017-18	25.8	67%	2016-17	24.5	61%	2015-16	26.5	67%	2014-15	29.0	75%	Y
Score Distribution																																																
(Post Test Improvement)																																																
0-10%	0																																															
10-20%	3																																															
20-30%	11																																															
30-40%	10																																															
40-50%	12																																															
50-60%	9																																															
60-70%	3																																															
<b>Average gain:</b>	<b>33.2</b>																																															
2020-21	33.1	94%																																														
2019-20	33.2	77%																																														
2018-19	28.5	71%																																														
2017-18	25.8	67%																																														
2016-17	24.5	61%																																														
2015-16	26.5	67%																																														
2014-15	29.0	75%																																														

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 1144: General Cell Biology (Online)	Comprehensive Final Exam	70% of students will score 70% or higher.	Given to all enrolled students in Fall & Spring terms.	42	<p>This frequency table summarizes student scores.</p> <table border="1" data-bbox="430 730 665 989"> <thead> <tr> <th colspan="2">Score Distribution</th> </tr> </thead> <tbody> <tr> <td>0-49%</td> <td>29</td> </tr> <tr> <td>50-59%</td> <td>5</td> </tr> <tr> <td>60-69%</td> <td>1</td> </tr> <tr> <td>70-79%</td> <td>3</td> </tr> <tr> <td>80-89%</td> <td>3</td> </tr> <tr> <td>90-100%</td> <td>1</td> </tr> <tr> <td><b>Average:</b></td> <td><b>49.7%</b></td> </tr> </tbody> </table>	Score Distribution		0-49%	29	50-59%	5	60-69%	1	70-79%	3	80-89%	3	90-100%	1	<b>Average:</b>	<b>49.7%</b>	<p>The average score was 49.7%.  17% (7 of 42) scored <math>\geq 70\%</math>.  While current numbers are slightly better than last year, they are still well below the standard.  Below are the average post-test score and the percentage of students that met the standard for the last two years.</p> <table border="1" data-bbox="755 426 808 646"> <tbody> <tr> <td>2020-21</td> <td>49.7</td> <td>17%</td> </tr> <tr> <td>2019-20</td> <td>45.6</td> <td>10%</td> </tr> </tbody> </table> <p>Final exam scores in this online course have been notably low. The unit exam scores, in contrast, are much higher. The instructor indicates that the final is proctored, while the individual unit exams are not. This suggests that some students may be cheating in the unproctored exams and are not adequately prepared for the proctored final. The instructor is exploring ways to improve this situation.</p>	2020-21	49.7	17%	2019-20	45.6	10%	N
Score Distribution																													
0-49%	29																												
50-59%	5																												
60-69%	1																												
70-79%	3																												
80-89%	3																												
90-100%	1																												
<b>Average:</b>	<b>49.7%</b>																												
2020-21	49.7	17%																											
2019-20	45.6	10%																											

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 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	11	<p>This frequency table summarizes student scores.</p> <table border="1" data-bbox="422 724 657 997"> <thead> <tr> <th colspan="2">Score Distribution</th> </tr> </thead> <tbody> <tr> <td>0-49%</td> <td>0</td> </tr> <tr> <td>50-59%</td> <td>0</td> </tr> <tr> <td>60-69%</td> <td>0</td> </tr> <tr> <td>70-79%</td> <td>4</td> </tr> <tr> <td>80-89%</td> <td>3</td> </tr> <tr> <td>90-100%</td> <td>4</td> </tr> <tr> <td><b>Average:</b></td> <td><b>85.0%</b></td> </tr> </tbody> </table>	Score Distribution		0-49%	0	50-59%	0	60-69%	0	70-79%	4	80-89%	3	90-100%	4	<b>Average:</b>	<b>85.0%</b>	<p>The average test score was 85%. 100% (11 of 11) scored <math>\geq 70\%</math>. Below are average score &amp; the percentage meeting the standard for the last six years.</p> <table border="1" data-bbox="568 430 730 682"> <tbody> <tr> <td>2020-21</td> <td>85.0</td> <td>100%</td> </tr> <tr> <td>2019-20</td> <td>78.0</td> <td>92%</td> </tr> <tr> <td>2018-19</td> <td>72.2</td> <td>58%</td> </tr> <tr> <td>2017-18</td> <td>75.6</td> <td>74%</td> </tr> <tr> <td>2016-17</td> <td>80.0</td> <td>82%</td> </tr> <tr> <td>2015-16</td> <td>80.7</td> <td>70%</td> </tr> </tbody> </table> <p>The standard has been met in five of the last six years. Performance has been highest in the last two years of this period. All students met the standard in this year. How much of this is due to changes in test administration due to COVID guidelines is not clear. Nonetheless, student performance for this measure has routinely met or exceeded the standard. This shows that students are able to analyze and evaluate knowledge of human cultures and the physical and natural world.</p>	2020-21	85.0	100%	2019-20	78.0	92%	2018-19	72.2	58%	2017-18	75.6	74%	2016-17	80.0	82%	2015-16	80.7	70%	Y
Score Distribution																																									
0-49%	0																																								
50-59%	0																																								
60-69%	0																																								
70-79%	4																																								
80-89%	3																																								
90-100%	4																																								
<b>Average:</b>	<b>85.0%</b>																																								
2020-21	85.0	100%																																							
2019-20	78.0	92%																																							
2018-19	72.2	58%																																							
2017-18	75.6	74%																																							
2016-17	80.0	82%																																							
2015-16	80.7	70%																																							

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 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	24	<p>This table summarizes student scores.</p> <table border="1" data-bbox="451 751 690 1018"> <thead> <tr> <th colspan="2">Score Distribution</th> </tr> </thead> <tbody> <tr> <td>0-49%</td> <td>1</td> </tr> <tr> <td>50-59%</td> <td>1</td> </tr> <tr> <td>60-69%</td> <td>1</td> </tr> <tr> <td>70-79%</td> <td>3</td> </tr> <tr> <td>80-89%</td> <td>12</td> </tr> <tr> <td>90-100%</td> <td>6</td> </tr> <tr> <td><b>Average:</b></td> <td><b>80.1%</b></td> </tr> </tbody> </table>	Score Distribution		0-49%	1	50-59%	1	60-69%	1	70-79%	3	80-89%	12	90-100%	6	<b>Average:</b>	<b>80.1%</b>	<p>The average test score was 80%. 87.5% (2 of 24) scored <math>\geq 70\%</math>. Shown are the average test score and the percentage of students that met the standard for the last six years.</p> <p>2020-21 80.0 88% 2019-20 77.0 83% 2018-19 78.2 89% 2017-18 78.1 85% 2015-16 75.0 77% 2014-15 76.0 85%</p> <p>Percentage of students meeting the 70% standard has exceed 80% for the last three years.</p> <p>Moreover, the 80% class average is the highest in this same period.</p> <p>This shows that students demonstrate an ability to acquire and analyze knowledge about the natural world.</p>	Y
Score Distribution																							
0-49%	1																						
50-59%	1																						
60-69%	1																						
70-79%	3																						
80-89%	12																						
90-100%	6																						
<b>Average:</b>	<b>80.1%</b>																						

**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.	8	This table summarizes student scores.  <table border="1"> <thead> <tr> <th>Score Distribution</th> <th>Count</th> </tr> </thead> <tbody> <tr> <td>0-49%</td> <td>0</td> </tr> <tr> <td>50-59%</td> <td>0</td> </tr> <tr> <td>60-69%</td> <td>0</td> </tr> <tr> <td>70-79%</td> <td>0</td> </tr> <tr> <td>80-89%</td> <td>3</td> </tr> <tr> <td>90-100%</td> <td>5</td> </tr> <tr> <td><b>Average:</b></td> <td><b>87.4%</b></td> </tr> </tbody> </table>	Score Distribution	Count	0-49%	0	50-59%	0	60-69%	0	70-79%	0	80-89%	3	90-100%	5	<b>Average:</b>	<b>87.4%</b>	The average test score was 87%. 100% (8 of 8) of students scored $\geq 70\%$ .  Shown are the average test score and the percentage of students that met the standard for the last five years.  2020-21 87.2 100% 2019-20 88.2 100% 2018-19 85.9 100% 2017-18 95.1 100% 2016-17 87.3 100% 2015-16 86.6 100%  Students have met the desired standard in every year that is has been assessed. This shows students are meeting the goal of effective written & visual communication.	Y
Score Distribution	Count																						
0-49%	0																						
50-59%	0																						
60-69%	0																						
70-79%	0																						
80-89%	3																						
90-100%	5																						
<b>Average:</b>	<b>87.4%</b>																						

**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.	8	This table summarizes student scores.	The average test score was 76%. 88% (7 of 8) of students scored $\geq 70\%$ .	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)														
					<p>Score Distribution</p> <table border="1"> <tr><td>0-49%</td><td>0</td></tr> <tr><td>50-59%</td><td>1</td></tr> <tr><td>60-69%</td><td>0</td></tr> <tr><td>70-79%</td><td>4</td></tr> <tr><td>80-89%</td><td>3</td></tr> <tr><td>90-100%</td><td>0</td></tr> <tr><td><b>Average:</b></td><td><b>76.2%</b></td></tr> </table>	0-49%	0	50-59%	1	60-69%	0	70-79%	4	80-89%	3	90-100%	0	<b>Average:</b>	<b>76.2%</b>	<p>Shown are the average test score and the percentage of students that met the standard for the last six years.</p> <p>2020-21 76.2 88%  2019-20 82.0 97%  2018-19 89.6 100%  2017-18 86.1 95%  2016-17 88.1 100%  2015-16 84.4 88%</p> <p>Students had the lowest performance against this measure in the last six year.</p> <p>Nonetheless, students have successfully met the desired standard in every year that is has been assessed. This shows students are meeting the goal of developing an understanding of the human experience.</p>	
0-49%	0																				
50-59%	1																				
60-69%	0																				
70-79%	4																				
80-89%	3																				
90-100%	0																				
<b>Average:</b>	<b>76.2%</b>																				

**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. 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	Biology has volunteered to serve as a pilot for the adoption of a standardized rubric for assessing critical thinking in the general education program. A class assignment is under construction to be implemented in lab sections of BIOL 1114 and BIOL 1144.	It is widely acknowledged that critical thinking skills are under-developed in college students. This assignment will hopefully help better develop these skills.	An improvement in critical thinking skills.
SLO #2	There is interest among some faculty to make some revisions to the pre/post assessment exam used in BIOL 1114.	The assessment exam has not been revised in many years. An audit of the exam questions will be done to see if they still align well with course content. Some rewording of existing questions may also be done.	Test performance may improve on questions that need better clarity.
SLO #2	There is interest among some faculty to make some revisions to the pre/post assessment exam used in BIOL 1144.	The assessment exam has not been revised in many years. An audit of the exam questions will be done to see if they still align well with course content. Some rewording of existing questions may also be done.	Test performance may improve on questions that need better clarity.
SLO #2	Dr. Bowen is going to change the manner in which lecture content is delivered in BIOL 3103. This will place a greater emphasis on Powerpoint over handwritten notes.	It will allow for a greater depth of material to be delivered during this two-week intersession course.	Greater understanding of the topics related to the course.
SLO #1/#2	Online lab sections are going to become hybridized with some take home labs that students can	The department expects a growth in online instruction. Ensuring consistency of content and rigor	Consistency of rigor and content across online and on-ground sections will ensure the students graduating

General Education Outcomes	Instructional or Assessment Changes	Rationale for Changes	Impact of Planned Changes on Student Learning and Other Considerations.
	order and work at home. Applies to lab sections of BIOL 1114/1144.	between online and on-ground sections is needed.	with a biology degree will receive quality education regardless of mode of delivery.



**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
<u>Full-time Faculty</u> Craig Zimmermann  Jerry Bowen  Mark Peaden  Uduak Udoh  Lisa Overall  Cheyanne Olson  Jae-Ho Kim  Jin Seo  <u>Adjunct Faculty</u> Chris Shelton Rance Kingfisher Gifty Benson	Provided data, analyzed data, prepared report  Provided data and reviewed report  Provided data and reviewed report  Provided data and reviewed report  Provided data and reviewed report  Provided data and reviewed report  Reviewed report  Reviewed report  Provided data Provided data Provided data	



B. Reviewed by:

Titles	Names	Signatures	Date
Department Head	 Jerry Bowen		02 Jun 2021
Dean	Keith W. Martin		6/18/21