

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

Fall 2019 – Spring 2020

## 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. | <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> |
| 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.                                                                    | <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>                                   |

| <b>RSU Mission</b>                                                                                                                                                                                                                          | <b>General Education Mission</b>  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
|                                                                                                                                                                                                                                             | 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 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."

| <b>Instructional or Assessment Changes</b>                                                                                                                                                                                                                                                                                                      | <b>Changes Implemented (Y/N)</b> | <b>Impact of Changes on Curriculum or Budget</b>                                                                                                                                                                                                                                                                                                                        |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| We may adopt a set of common assessment questions to be used by all lab instructors on lab exams. We must rely heavily on adjunct instructors for covering our numerous freshman biology lab sections. Continuity and consistency of instruction among these instructors has long been a concern.                                               | Y                                | Starting in Spring 2020, a pool of shared assessment questions was used across lab instructors in BIOL 1114 and 1144. Adjunct instructors received individual training in regards to assessment and grading techniques. These changes resulted in a greater consistency of grades across all lab sections compared to previous semesters.                               |
| Changes to the lab curriculum. Finding the right mixture of lab content is an ongoing process in our freshman labs. Some labs try to incorporate too much into the 110 minute period, while others are too sparse. We are also trying to incorporate more scientific instrumentation and more essential lab techniques into our lab activities. | Y                                | Lab preparatory material for BIOL 1114 and 1144 were put online for students to complete before the start of class. This makes for a more efficient use of the 110-minute lab period. Additionally, several BIOL 1144 labs have incorporated a greater amount of scientific instrumentation into the exercises to acquaint students with their purpose and utilization. |

## 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 changes were recommended.                                              |                               |                                                                                              |

## 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  | 70% of students will score 70% or above. | Given to all enrolled students in Fall & Spring terms. | 123                | This table summarizes for student scores.<br><table><tr><th colspan="2">Score Distribution</th></tr><tr><td>0-49%</td><td>9</td></tr><tr><td>50-59%</td><td>6</td></tr><tr><td>60-69%</td><td>19</td></tr><tr><td>70-79%</td><td>19</td></tr><tr><td>80-89%</td><td>45</td></tr><tr><td>90-100%</td><td>25</td></tr><tr><td>Average:</td><td>76.9%</td></tr></table> | Score Distribution |                                    | 0-49% | 9 | 50-59% | 6 | 60-69% | 19 | 70-79% | 19 | 80-89% | 45 | 90-100% | 25 | Average: | 76.9% | The average score was 76.9%.<br><br>72.4% (89 of 123) scored $\geq 70\%$ .<br><br>Student performance has met the standard in six of the last seven years.<br><br>Below are average score and percentage that met the standard for the last six years. | Y |
|                                                                                                                                 | Score Distribution     |                                          |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                      |                    |                                    |       |   |        |   |        |    |        |    |        |    |         |    |          |       |                                                                                                                                                                                                                                                        |   |
| 0-49%                                                                                                                           | 9                      |                                          |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                      |                    |                                    |       |   |        |   |        |    |        |    |        |    |         |    |          |       |                                                                                                                                                                                                                                                        |   |
| 50-59%                                                                                                                          | 6                      |                                          |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                      |                    |                                    |       |   |        |   |        |    |        |    |        |    |         |    |          |       |                                                                                                                                                                                                                                                        |   |
| 60-69%                                                                                                                          | 19                     |                                          |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                      |                    |                                    |       |   |        |   |        |    |        |    |        |    |         |    |          |       |                                                                                                                                                                                                                                                        |   |
| 70-79%                                                                                                                          | 19                     |                                          |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                      |                    |                                    |       |   |        |   |        |    |        |    |        |    |         |    |          |       |                                                                                                                                                                                                                                                        |   |
| 80-89%                                                                                                                          | 45                     |                                          |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                      |                    |                                    |       |   |        |   |        |    |        |    |        |    |         |    |          |       |                                                                                                                                                                                                                                                        |   |
| 90-100%                                                                                                                         | 25                     |                                          |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                      |                    |                                    |       |   |        |   |        |    |        |    |        |    |         |    |          |       |                                                                                                                                                                                                                                                        |   |
| Average:                                                                                                                        | 76.9%                  |                                          |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                      |                    |                                    |       |   |        |   |        |    |        |    |        |    |         |    |          |       |                                                                                                                                                                                                                                                        |   |
| Comprises a 15-question multiple choice quiz on principles of science & the scientific method.<br><br>This quiz is given in our |                        |                                          |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                      |                    |                                    |       |   |        |   |        |    |        |    |        |    |         |    |          |       |                                                                                                                                                                                                                                                        |   |

| 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) |       |   |        |   |        |    |        |    |        |    |         |    |          |       |                                                                                                                                                                                                                                                                                                                                                                                                 |   |
|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|--------------------------------------------------------|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|-------|---|--------|---|--------|----|--------|----|--------|----|---------|----|----------|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
|                                 | lab sections.                                                                                                                                                                      |                                          |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                  | 2019-20 76.9 72%<br>2018-19 78.2 75%<br>2017-18 71.3 56%<br>2016-17 74.8 70%<br>2015-16 77.6 73%<br>2014-15 77.7 75%<br><br>This demonstrates that students can apply critical thinking in evaluating scientific evidence. |                                    |       |   |        |   |        |    |        |    |        |    |         |    |          |       |                                                                                                                                                                                                                                                                                                                                                                                                 |   |
| BIOL 1144: General Cell Biology | Science Literacy Quiz<br>Comprises a 15-question multiple choice assessment on the principles of science and the scientific method.<br><br>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. | 77                 | This table summarizes student scores.<br><table><tr><th colspan="2">Score Distribution</th></tr><tr><td>0-49%</td><td>6</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>12</td></tr><tr><td>80-89%</td><td>23</td></tr><tr><td>90-100%</td><td>17</td></tr><tr><td>Average:</td><td>76.5%</td></tr></table> | Score Distribution                                                                                                                                                                                                         |                                    | 0-49% | 6 | 50-59% | 3 | 60-69% | 16 | 70-79% | 12 | 80-89% | 23 | 90-100% | 17 | Average: | 76.5% | The average score was 76.5%.<br><br>67.5% (52 of 77) scored ≥70%.<br><br>Below are average score and percentage that met the standard for the last six years.<br><br>2019-20 76.5 77%<br>2018-19 76.8 76%<br>2017-18 77.4 74%<br>2016-17 78.7 75%<br>2015-16 79.8 82%<br>2014-15 77.1 70%<br><br>This demonstrates that students can apply critical thinking in evaluating scientific evidence. | Y |
| Score Distribution              |                                                                                                                                                                                    |                                          |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                            |                                    |       |   |        |   |        |    |        |    |        |    |         |    |          |       |                                                                                                                                                                                                                                                                                                                                                                                                 |   |
| 0-49%                           | 6                                                                                                                                                                                  |                                          |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                            |                                    |       |   |        |   |        |    |        |    |        |    |         |    |          |       |                                                                                                                                                                                                                                                                                                                                                                                                 |   |
| 50-59%                          | 3                                                                                                                                                                                  |                                          |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                            |                                    |       |   |        |   |        |    |        |    |        |    |         |    |          |       |                                                                                                                                                                                                                                                                                                                                                                                                 |   |
| 60-69%                          | 16                                                                                                                                                                                 |                                          |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                            |                                    |       |   |        |   |        |    |        |    |        |    |         |    |          |       |                                                                                                                                                                                                                                                                                                                                                                                                 |   |
| 70-79%                          | 12                                                                                                                                                                                 |                                          |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                            |                                    |       |   |        |   |        |    |        |    |        |    |         |    |          |       |                                                                                                                                                                                                                                                                                                                                                                                                 |   |
| 80-89%                          | 23                                                                                                                                                                                 |                                          |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                            |                                    |       |   |        |   |        |    |        |    |        |    |         |    |          |       |                                                                                                                                                                                                                                                                                                                                                                                                 |   |
| 90-100%                         | 17                                                                                                                                                                                 |                                          |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                            |                                    |       |   |        |   |        |    |        |    |        |    |         |    |          |       |                                                                                                                                                                                                                                                                                                                                                                                                 |   |
| Average:                        | 76.5%                                                                                                                                                                              |                                          |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                            |                                    |       |   |        |   |        |    |        |    |        |    |         |    |          |       |                                                                                                                                                                                                                                                                                                                                                                                                 |   |

**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<br>50 multiple-choice question exam on basic concepts of biology.<br>Administered on first day of lecture class and at the time of final exam.<br>We consider two results: 1) post test scores, and 2) the difference in pre-post test scores.<br>Here, we discuss the post-test score results. Change in pre-post scores is discussed in next section. | 70% of students will score 70% or above. | Given to all enrolled students in Fall & Spring terms. | 192                | <p>This table summarizes student scores.</p> <table><tr><th>Score Distribution</th><th></th></tr><tr><td>0-49%</td><td>14</td></tr><tr><td>50-59%</td><td>12</td></tr><tr><td>60-69%</td><td>25</td></tr><tr><td>70-79%</td><td>36</td></tr><tr><td>80-89%</td><td>64</td></tr><tr><td>90-100%</td><td>41</td></tr><tr><td><b>Average:</b></td><td><b>76.9%</b></td></tr></table> | Score Distribution |                                    | 0-49% | 14 | 50-59% | 12 | 60-69% | 25 | 70-79% | 36 | 80-89% | 64 | 90-100% | 41 | <b>Average:</b> | <b>76.9%</b> | <p>The average score was 76.9%.</p> <p>73% (141 of 192) of students met the standard of scoring 70% or higher.</p> <p>Below are average score and percentage that met the standard for the last five years.</p> <table><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></table> <p>This is the highest overall average in the last six academic years. It is also the first time that we have met the standard during this same period.</p> <p>There is, however, good reason to be suspicious of these findings. The Spring 2020 numbers were much higher than the previous Fall. Due to the COVID-19 virus, the post-test was administered online during finals week without any formal proctoring. Students, therefore, were</p> | 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% | Y |
| Score Distribution         |                                                                                                                                                                                                                                                                                                                                                                                     |                                          |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                                   |                    |                                    |       |    |        |    |        |    |        |    |        |    |         |    |                 |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |
| 0-49%                      | 14                                                                                                                                                                                                                                                                                                                                                                                  |                                          |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                                   |                    |                                    |       |    |        |    |        |    |        |    |        |    |         |    |                 |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |
| 50-59%                     | 12                                                                                                                                                                                                                                                                                                                                                                                  |                                          |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                                   |                    |                                    |       |    |        |    |        |    |        |    |        |    |         |    |                 |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |
| 60-69%                     | 25                                                                                                                                                                                                                                                                                                                                                                                  |                                          |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                                   |                    |                                    |       |    |        |    |        |    |        |    |        |    |         |    |                 |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |
| 70-79%                     | 36                                                                                                                                                                                                                                                                                                                                                                                  |                                          |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                                   |                    |                                    |       |    |        |    |        |    |        |    |        |    |         |    |                 |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |
| 80-89%                     | 64                                                                                                                                                                                                                                                                                                                                                                                  |                                          |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                                   |                    |                                    |       |    |        |    |        |    |        |    |        |    |         |    |                 |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |
| 90-100%                    | 41                                                                                                                                                                                                                                                                                                                                                                                  |                                          |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                                   |                    |                                    |       |    |        |    |        |    |        |    |        |    |         |    |                 |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |
| <b>Average:</b>            | <b>76.9%</b>                                                                                                                                                                                                                                                                                                                                                                        |                                          |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                                   |                    |                                    |       |    |        |    |        |    |        |    |        |    |         |    |                 |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |
| 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%                                      |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                                   |                    |                                    |       |    |        |    |        |    |        |    |        |    |         |    |                 |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |

| 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) |       |   |        |    |        |    |        |    |        |    |        |    |        |   |               |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |
|-----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|--------------------------------------------------------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|-------|---|--------|----|--------|----|--------|----|--------|----|--------|----|--------|---|---------------|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|------|-----|---------|------|-----|---------|------|-----|---------|------|-----|---------|------|-----|---------|------|-----|---|
|                                               |                                                                                                                                                                                                                                                                                                                                                |                                                                                    |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | able to research the answers during the exam.<br>How the department will deal with online exam proctoring in the future should be key to insure the integrity of our online curriculum. |                                    |       |   |        |    |        |    |        |    |        |    |        |    |        |   |               |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |
| BIOL 1114: General Biology                    | Comprehensive Pre-Post Exam<br>50 multiple-choice question exam on basic concepts of biology.<br>Administered on first day of lecture class and at the time of final exam.<br>We consider two results: 1) post test scores, and 2) the difference in pre-post test scores<br>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. | 181                | This table summarizes the change in student scores for the pre & post test scores.<br><table><tr><th colspan="2">Score Distribution<br/>(Post Test Improvement)</th></tr><tr><td>0-10%</td><td>8</td></tr><tr><td>10-20%</td><td>17</td></tr><tr><td>20-30%</td><td>25</td></tr><tr><td>30-40%</td><td>42</td></tr><tr><td>40-50%</td><td>53</td></tr><tr><td>50-60%</td><td>29</td></tr><tr><td>60-70%</td><td>7</td></tr><tr><td>Average gain:</td><td>37.2</td></tr></table> | Score Distribution<br>(Post Test Improvement)                                                                                                                                           |                                    | 0-10% | 8 | 10-20% | 17 | 20-30% | 25 | 30-40% | 42 | 40-50% | 53 | 50-60% | 29 | 60-70% | 7 | Average gain: | 37.2 | Mean improvement was 37.2 percentage points.<br>90.0% (156 of 181) of students improved their score by 20 percentage points or more.<br>Below are the average score improvement and percentage that met the standard for the last six years.<br><table><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><tr><td>2014-15</td><td>26.0</td><td>72%</td></tr></table> Students have met the standard in the last four academic years. The improvement of 37.2 percentage points over the pre-test is the highest seen since this measure was adopted in 2011.<br>As mentioned above, these results are likely not | 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% | 2014-15 | 26.0 | 72% | Y |
| Score Distribution<br>(Post Test Improvement) |                                                                                                                                                                                                                                                                                                                                                |                                                                                    |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                         |                                    |       |   |        |    |        |    |        |    |        |    |        |    |        |   |               |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |
| 0-10%                                         | 8                                                                                                                                                                                                                                                                                                                                              |                                                                                    |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                         |                                    |       |   |        |    |        |    |        |    |        |    |        |    |        |   |               |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |
| 10-20%                                        | 17                                                                                                                                                                                                                                                                                                                                             |                                                                                    |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                         |                                    |       |   |        |    |        |    |        |    |        |    |        |    |        |   |               |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |
| 20-30%                                        | 25                                                                                                                                                                                                                                                                                                                                             |                                                                                    |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                         |                                    |       |   |        |    |        |    |        |    |        |    |        |    |        |   |               |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |
| 30-40%                                        | 42                                                                                                                                                                                                                                                                                                                                             |                                                                                    |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                         |                                    |       |   |        |    |        |    |        |    |        |    |        |    |        |   |               |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |
| 40-50%                                        | 53                                                                                                                                                                                                                                                                                                                                             |                                                                                    |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                         |                                    |       |   |        |    |        |    |        |    |        |    |        |    |        |   |               |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |
| 50-60%                                        | 29                                                                                                                                                                                                                                                                                                                                             |                                                                                    |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                         |                                    |       |   |        |    |        |    |        |    |        |    |        |    |        |   |               |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |
| 60-70%                                        | 7                                                                                                                                                                                                                                                                                                                                              |                                                                                    |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                         |                                    |       |   |        |    |        |    |        |    |        |    |        |    |        |   |               |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |
| Average gain:                                 | 37.2                                                                                                                                                                                                                                                                                                                                           |                                                                                    |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                         |                                    |       |   |        |    |        |    |        |    |        |    |        |    |        |   |               |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |
| 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%                                                                                |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                         |                                    |       |   |        |    |        |    |        |    |        |    |        |    |        |   |               |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |
| 2014-15                                       | 26.0                                                                                                                                                                                                                                                                                                                                           | 72%                                                                                |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                         |                                    |       |   |        |    |        |    |        |    |        |    |        |    |        |   |               |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |

| A.<br>Course                                  | B.<br>Assessment<br>Measures                                                                             | C.<br>Performance<br>Standards                    | D.<br>Sampling<br>Methods                                          | E.<br>Sample<br>Size<br>(N) | F.<br>Results                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | G.<br>Conclusions                                                                                                                                                                                                                                  | H.<br>Performance<br>Standards Met<br>(Y/N) |       |   |        |   |        |   |        |    |        |    |         |    |          |       |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |
|-----------------------------------------------|----------------------------------------------------------------------------------------------------------|---------------------------------------------------|--------------------------------------------------------------------|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|-------|---|--------|---|--------|---|--------|----|--------|----|---------|----|----------|-------|---------|------|-----|---------|------|-----|---------|------|-----|---------|------|-----|---------|------|-----|---------|------|-----|---|
|                                               |                                                                                                          |                                                   |                                                                    |                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | valid, as the post-test portion of the assessment was administered online due to the COVID-19 crisis. This was done without any formal exam proctoring. The improvement over the pre-test was much higher in the spring semester than in the fall. |                                             |       |   |        |   |        |   |        |    |        |    |         |    |          |       |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |
| BIOL 1114R:<br>General<br>Biology<br>(Online) | Comprehensive<br>Final Exam<br><br>Comprehensive<br>review of topics<br>covered over<br>the entire term. | 70% of<br>students will<br>score 70% or<br>above. | Given to all<br>enrolled<br>students in<br>Fall & Spring<br>terms. | 107                         | <p>This frequency table summarizes student scores.</p> <table><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>4</td></tr><tr><td>60-69%</td><td>5</td></tr><tr><td>70-79%</td><td>28</td></tr><tr><td>80-89%</td><td>51</td></tr><tr><td>90-100%</td><td>12</td></tr><tr><td>Average:</td><td>81.1%</td></tr></tbody></table> <p>Below are exam averages and percentage that met the standard for the last six years.</p> <table><tbody><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</p> | Score Distribution                                                                                                                                                                                                                                 |                                             | 0-49% | 0 | 50-59% | 4 | 60-69% | 5 | 70-79% | 28 | 80-89% | 51 | 90-100% | 12 | Average: | 81.1% | 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%                                         | 0                                                                                                        |                                                   |                                                                    |                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                    |                                             |       |   |        |   |        |   |        |    |        |    |         |    |          |       |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |
| 50-59%                                        | 4                                                                                                        |                                                   |                                                                    |                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                    |                                             |       |   |        |   |        |   |        |    |        |    |         |    |          |       |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |
| 60-69%                                        | 5                                                                                                        |                                                   |                                                                    |                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                    |                                             |       |   |        |   |        |   |        |    |        |    |         |    |          |       |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |
| 70-79%                                        | 28                                                                                                       |                                                   |                                                                    |                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                    |                                             |       |   |        |   |        |   |        |    |        |    |         |    |          |       |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |
| 80-89%                                        | 51                                                                                                       |                                                   |                                                                    |                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                    |                                             |       |   |        |   |        |   |        |    |        |    |         |    |          |       |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |
| 90-100%                                       | 12                                                                                                       |                                                   |                                                                    |                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                    |                                             |       |   |        |   |        |   |        |    |        |    |         |    |          |       |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |
| Average:                                      | 81.1%                                                                                                    |                                                   |                                                                    |                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                    |                                             |       |   |        |   |        |   |        |    |        |    |         |    |          |       |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |
| 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) |       |    |        |    |        |    |        |    |        |    |         |    |                 |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |
|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|--------------------------------------------------------|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|-------|----|--------|----|--------|----|--------|----|--------|----|---------|----|-----------------|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|------|-----|---------|------|-----|---------|------|-----|---------|------|-----|---------|------|-----|---------|------|-----|---|
|                                 |                                                                                                                                                                                                                                                                                                                                                          |                                          |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                                         | 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. |                                    |       |    |        |    |        |    |        |    |        |    |         |    |                 |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |
| BIOL 1144: General Cell Biology | Comprehensive Pre-Post Exam<br>50 multiple-choice question exam on basic concepts of biology.<br>Administered on first day of lecture class and at the time of final exam.<br>We consider two results: 1) post test scores, and 2) the difference in pre-post test scores.<br>Here, we discuss the post-test score results. Change in pre-post scores is | 70% of students will score 70% or above. | Given to all enrolled students in Fall & Spring terms. | 153                | <p>This frequency table summarizes student scores.</p> <table><tr><th colspan="2">Score Distribution</th></tr><tr><td>0-49%</td><td>23</td></tr><tr><td>50-59%</td><td>13</td></tr><tr><td>60-69%</td><td>14</td></tr><tr><td>70-79%</td><td>34</td></tr><tr><td>80-89%</td><td>45</td></tr><tr><td>90-100%</td><td>32</td></tr><tr><td><b>Average:</b></td><td>73.1%</td></tr></table> | Score Distribution                                                                                                                                                                                                                            |                                    | 0-49% | 23 | 50-59% | 13 | 60-69% | 14 | 70-79% | 34 | 80-89% | 45 | 90-100% | 32 | <b>Average:</b> | 73.1% | <p>The average score was 73.1%.</p> <p>67% (103 of 153) scored <math>\geq 70\%</math>.</p> <p>Below are the average post-test score and the percentage of students that met the standard for the last six years.</p> <table><tr><td>2019-20</td><td>73.1</td><td>67%</td></tr><tr><td>2018-19</td><td>67.8</td><td>47%</td></tr><tr><td>2017-18</td><td>66.4</td><td>45%</td></tr><tr><td>2016-17</td><td>65.0</td><td>40%</td></tr><tr><td>2015-16</td><td>66.3</td><td>44%</td></tr><tr><td>2014-15</td><td>69.0</td><td>55%</td></tr></table> <p>Students have failed to meet our standard for this measure in all years since 2012. The results of this academic year, however, are the highest seen in the last six years. This is the first time the overall average exceeded 70%. Also 67% of student met the benchmark, just shy</p> | 2019-20 | 73.1 | 67% | 2018-19 | 67.8 | 47% | 2017-18 | 66.4 | 45% | 2016-17 | 65.0 | 40% | 2015-16 | 66.3 | 44% | 2014-15 | 69.0 | 55% | N |
| Score Distribution              |                                                                                                                                                                                                                                                                                                                                                          |                                          |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                               |                                    |       |    |        |    |        |    |        |    |        |    |         |    |                 |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |
| 0-49%                           | 23                                                                                                                                                                                                                                                                                                                                                       |                                          |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                               |                                    |       |    |        |    |        |    |        |    |        |    |         |    |                 |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |
| 50-59%                          | 13                                                                                                                                                                                                                                                                                                                                                       |                                          |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                               |                                    |       |    |        |    |        |    |        |    |        |    |         |    |                 |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |
| 60-69%                          | 14                                                                                                                                                                                                                                                                                                                                                       |                                          |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                               |                                    |       |    |        |    |        |    |        |    |        |    |         |    |                 |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |
| 70-79%                          | 34                                                                                                                                                                                                                                                                                                                                                       |                                          |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                               |                                    |       |    |        |    |        |    |        |    |        |    |         |    |                 |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |
| 80-89%                          | 45                                                                                                                                                                                                                                                                                                                                                       |                                          |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                               |                                    |       |    |        |    |        |    |        |    |        |    |         |    |                 |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |
| 90-100%                         | 32                                                                                                                                                                                                                                                                                                                                                       |                                          |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                               |                                    |       |    |        |    |        |    |        |    |        |    |         |    |                 |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |
| <b>Average:</b>                 | 73.1%                                                                                                                                                                                                                                                                                                                                                    |                                          |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                               |                                    |       |    |        |    |        |    |        |    |        |    |         |    |                 |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |
| 2019-20                         | 73.1                                                                                                                                                                                                                                                                                                                                                     | 67%                                      |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                               |                                    |       |    |        |    |        |    |        |    |        |    |         |    |                 |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |
| 2018-19                         | 67.8                                                                                                                                                                                                                                                                                                                                                     | 47%                                      |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                               |                                    |       |    |        |    |        |    |        |    |        |    |         |    |                 |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |
| 2017-18                         | 66.4                                                                                                                                                                                                                                                                                                                                                     | 45%                                      |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                               |                                    |       |    |        |    |        |    |        |    |        |    |         |    |                 |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |
| 2016-17                         | 65.0                                                                                                                                                                                                                                                                                                                                                     | 40%                                      |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                               |                                    |       |    |        |    |        |    |        |    |        |    |         |    |                 |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |
| 2015-16                         | 66.3                                                                                                                                                                                                                                                                                                                                                     | 44%                                      |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                               |                                    |       |    |        |    |        |    |        |    |        |    |         |    |                 |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |
| 2014-15                         | 69.0                                                                                                                                                                                                                                                                                                                                                     | 55%                                      |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                               |                                    |       |    |        |    |        |    |        |    |        |    |         |    |                 |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |

| 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) |       |    |        |   |        |    |        |    |        |    |        |    |        |    |               |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |
|-----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|--------------------------------------------------------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|-------|----|--------|---|--------|----|--------|----|--------|----|--------|----|--------|----|---------------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|------|-----|---------|------|-----|---------|------|-----|---------|------|-----|---------|------|-----|---------|------|-----|---|
|                                               | discussed in next section.                                                                                                                                                                                                                                                                                                                                 |                                                                                    |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                   | of the desired 70%. The post-test portion of the assessment was given online as part of a final exam. As proctoring was not used, some of this increase may be due to student cheating. |                                    |       |    |        |   |        |    |        |    |        |    |        |    |        |    |               |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |
| BIOL 1144: General Cell Biology               | Comprehensive Pre-Post Exam<br>50 multiple-choice question exam on basic concepts of biology.<br><br>Administered on first day of lecture class and at the time of final exam.<br><br>We consider two results: 1) post test scores, and 2) the difference in pre-post test scores<br><br>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. | 217                | <p>This frequency table summarizes student scores.</p> <table><tr><th colspan="2">Score Distribution<br/>(Post Test Improvement)</th></tr><tr><td>0-10%</td><td>26</td></tr><tr><td>10-20%</td><td>9</td></tr><tr><td>20-30%</td><td>20</td></tr><tr><td>30-40%</td><td>32</td></tr><tr><td>40-50%</td><td>36</td></tr><tr><td>50-60%</td><td>19</td></tr><tr><td>60-70%</td><td>10</td></tr><tr><td>Average gain:</td><td>33.2</td></tr></table> | Score Distribution<br>(Post Test Improvement)                                                                                                                                           |                                    | 0-10% | 26 | 10-20% | 9 | 20-30% | 20 | 30-40% | 32 | 40-50% | 36 | 50-60% | 19 | 60-70% | 10 | Average gain: | 33.2 | <p>Mean improvement was 33 percentage points.<br/>77% (117 of 152) of students improved their score by <math>\geq 20\%</math>.</p> <p>Below are the average score improvement and percentage that met the standard for the last six years.</p> <table><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></table> <p>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. This is the second consecutive year that our students have met this standard.</p> <p>Moreover, the improve-</p> | 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<br>(Post Test Improvement) |                                                                                                                                                                                                                                                                                                                                                            |                                                                                    |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                         |                                    |       |    |        |   |        |    |        |    |        |    |        |    |        |    |               |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |
| 0-10%                                         | 26                                                                                                                                                                                                                                                                                                                                                         |                                                                                    |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                         |                                    |       |    |        |   |        |    |        |    |        |    |        |    |        |    |               |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |
| 10-20%                                        | 9                                                                                                                                                                                                                                                                                                                                                          |                                                                                    |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                         |                                    |       |    |        |   |        |    |        |    |        |    |        |    |        |    |               |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |
| 20-30%                                        | 20                                                                                                                                                                                                                                                                                                                                                         |                                                                                    |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                         |                                    |       |    |        |   |        |    |        |    |        |    |        |    |        |    |               |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |
| 30-40%                                        | 32                                                                                                                                                                                                                                                                                                                                                         |                                                                                    |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                         |                                    |       |    |        |   |        |    |        |    |        |    |        |    |        |    |               |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |
| 40-50%                                        | 36                                                                                                                                                                                                                                                                                                                                                         |                                                                                    |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                         |                                    |       |    |        |   |        |    |        |    |        |    |        |    |        |    |               |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |
| 50-60%                                        | 19                                                                                                                                                                                                                                                                                                                                                         |                                                                                    |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                         |                                    |       |    |        |   |        |    |        |    |        |    |        |    |        |    |               |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |
| 60-70%                                        | 10                                                                                                                                                                                                                                                                                                                                                         |                                                                                    |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                         |                                    |       |    |        |   |        |    |        |    |        |    |        |    |        |    |               |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |
| Average gain:                                 | 33.2                                                                                                                                                                                                                                                                                                                                                       |                                                                                    |                                                        |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                         |                                    |       |    |        |   |        |    |        |    |        |    |        |    |        |    |               |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |         |      |     |   |
| 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) |       |     |         |      |        |         |        |     |        |   |         |   |          |       |                                                                                                                                                                                                                                                                                                                                                      |   |
|------------------------------------------|-------------------------------------------------------------------------------------------------------------|-------------------------------------------|-----------------------------------------------------------|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|-------|-----|---------|------|--------|---------|--------|-----|--------|---|---------|---|----------|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
|                                          |                                                                                                             |                                           |                                                           |                    |                                                                                                                                                                                                                                                                                                                                                                         | ment of 33.2 percentage points over the pre-test was highest seen over the last six year. As this exam was administered online due to the COVID-19 pandemic, these results should be viewed critically.                                                                                                                                                             |                                    |       |     |         |      |        |         |        |     |        |   |         |   |          |       |                                                                                                                                                                                                                                                                                                                                                      |   |
| 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.    | 52                 | This frequency table summarizes student scores.<br><table><tr><th colspan="2">Score Distribution</th></tr><tr><td>0-49%</td><td>37</td></tr><tr><td>50-59%</td><td>9</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>1</td></tr><tr><td>90-100%</td><td>1</td></tr><tr><td>Average:</td><td>45.6%</td></tr></table> | Score Distribution                                                                                                                                                                                                                                                                                                                                                  |                                    | 0-49% | 37  | 50-59%  | 9    | 60-69% | 1       | 70-79% | 3   | 80-89% | 1 | 90-100% | 1 | Average: | 45.6% | 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. | N |
| Score Distribution                       |                                                                                                             |                                           |                                                           |                    |                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                     |                                    |       |     |         |      |        |         |        |     |        |   |         |   |          |       |                                                                                                                                                                                                                                                                                                                                                      |   |
| 0-49%                                    | 37                                                                                                          |                                           |                                                           |                    |                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                     |                                    |       |     |         |      |        |         |        |     |        |   |         |   |          |       |                                                                                                                                                                                                                                                                                                                                                      |   |
| 50-59%                                   | 9                                                                                                           |                                           |                                                           |                    |                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                     |                                    |       |     |         |      |        |         |        |     |        |   |         |   |          |       |                                                                                                                                                                                                                                                                                                                                                      |   |
| 60-69%                                   | 1                                                                                                           |                                           |                                                           |                    |                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                     |                                    |       |     |         |      |        |         |        |     |        |   |         |   |          |       |                                                                                                                                                                                                                                                                                                                                                      |   |
| 70-79%                                   | 3                                                                                                           |                                           |                                                           |                    |                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                     |                                    |       |     |         |      |        |         |        |     |        |   |         |   |          |       |                                                                                                                                                                                                                                                                                                                                                      |   |
| 80-89%                                   | 1                                                                                                           |                                           |                                                           |                    |                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                     |                                    |       |     |         |      |        |         |        |     |        |   |         |   |          |       |                                                                                                                                                                                                                                                                                                                                                      |   |
| 90-100%                                  | 1                                                                                                           |                                           |                                                           |                    |                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                     |                                    |       |     |         |      |        |         |        |     |        |   |         |   |          |       |                                                                                                                                                                                                                                                                                                                                                      |   |
| Average:                                 | 45.6%                                                                                                       |                                           |                                                           |                    |                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                     |                                    |       |     |         |      |        |         |        |     |        |   |         |   |          |       |                                                                                                                                                                                                                                                                                                                                                      |   |
| BIOL 1134: General Environmental Biology | Comprehensive Final Exam<br>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 | 36                 | This frequency table summarizes student scores.                                                                                                                                                                                                                                                                                                                         | The average test score was 78%.<br><br>92% (21 of 26) scored $\geq 70\%$ .<br><br>Below are average test scores & the percentage of students that met the standard for the last six years.<br><table><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></table> | 2019-20                            | 78.0  | 92% | 2018-19 | 72.2 | 58%    | 2017-18 | 75.6   | 74% | Y      |   |         |   |          |       |                                                                                                                                                                                                                                                                                                                                                      |   |
| 2019-20                                  | 78.0                                                                                                        | 92%                                       |                                                           |                    |                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                     |                                    |       |     |         |      |        |         |        |     |        |   |         |   |          |       |                                                                                                                                                                                                                                                                                                                                                      |   |
| 2018-19                                  | 72.2                                                                                                        | 58%                                       |                                                           |                    |                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                     |                                    |       |     |         |      |        |         |        |     |        |   |         |   |          |       |                                                                                                                                                                                                                                                                                                                                                      |   |
| 2017-18                                  | 75.6                                                                                                        | 74%                                       |                                                           |                    |                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                     |                                    |       |     |         |      |        |         |        |     |        |   |         |   |          |       |                                                                                                                                                                                                                                                                                                                                                      |   |

| 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) |       |   |        |   |        |   |        |   |        |    |         |    |          |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
|----------------------------------------------------|-------------------------------------|------------------------------------------|---------------------------------------------------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|------------------------------------|-------|---|--------|---|--------|---|--------|---|--------|----|---------|----|----------|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|
|                                                    |                                     |                                          |                                                   |                    | <table><tr><th colspan="2">Score Distribution</th></tr><tr><td>0-49%</td><td>0</td></tr><tr><td>50-59%</td><td>2</td></tr><tr><td>60-69%</td><td>3</td></tr><tr><td>70-79%</td><td>8</td></tr><tr><td>80-89%</td><td>11</td></tr><tr><td>90-100%</td><td>2</td></tr><tr><td>Average:</td><td>78.0%</td></tr></table>                  | Score Distribution |                                    | 0-49% | 0 | 50-59% | 2 | 60-69% | 3 | 70-79% | 8 | 80-89% | 11 | 90-100% | 2  | Average: | 78.0% | 2016-17 80.0 82%<br>2015-16 80.7 70%<br>2014-15 77.2 70%<br><br>The standard has been met in five of the last six years. This demonstrates that students are able to, analyze and evaluate knowledge of human cultures and the physical and natural world.<br><br>It should be noted that while this year's average was similar to previous years, the percentage of students meeting the benchmark was much higher. The final exam was administered online without any proctoring, so cheating may have elevated scores. |   | Y |
| Score Distribution                                 |                                     |                                          |                                                   |                    |                                                                                                                                                                                                                                                                                                                                       |                    |                                    |       |   |        |   |        |   |        |   |        |    |         |    |          |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| 0-49%                                              | 0                                   |                                          |                                                   |                    |                                                                                                                                                                                                                                                                                                                                       |                    |                                    |       |   |        |   |        |   |        |   |        |    |         |    |          |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| 50-59%                                             | 2                                   |                                          |                                                   |                    |                                                                                                                                                                                                                                                                                                                                       |                    |                                    |       |   |        |   |        |   |        |   |        |    |         |    |          |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| 60-69%                                             | 3                                   |                                          |                                                   |                    |                                                                                                                                                                                                                                                                                                                                       |                    |                                    |       |   |        |   |        |   |        |   |        |    |         |    |          |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| 70-79%                                             | 8                                   |                                          |                                                   |                    |                                                                                                                                                                                                                                                                                                                                       |                    |                                    |       |   |        |   |        |   |        |   |        |    |         |    |          |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| 80-89%                                             | 11                                  |                                          |                                                   |                    |                                                                                                                                                                                                                                                                                                                                       |                    |                                    |       |   |        |   |        |   |        |   |        |    |         |    |          |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| 90-100%                                            | 2                                   |                                          |                                                   |                    |                                                                                                                                                                                                                                                                                                                                       |                    |                                    |       |   |        |   |        |   |        |   |        |    |         |    |          |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Average:                                           | 78.0%                               |                                          |                                                   |                    |                                                                                                                                                                                                                                                                                                                                       |                    |                                    |       |   |        |   |        |   |        |   |        |    |         |    |          |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| 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 | 48                 | <table><tr><th colspan="2">Score Distribution</th></tr><tr><td>0-49%</td><td>6</td></tr><tr><td>50-59%</td><td>0</td></tr><tr><td>60-69%</td><td>2</td></tr><tr><td>70-79%</td><td>9</td></tr><tr><td>80-89%</td><td>20</td></tr><tr><td>90-100%</td><td>11</td></tr><tr><td>Average:</td><td>77.0%</td></tr></table> student scores. | Score Distribution |                                    | 0-49% | 6 | 50-59% | 0 | 60-69% | 2 | 70-79% | 9 | 80-89% | 20 | 90-100% | 11 | Average: | 77.0% | The average test score was 77%.<br><br>83% (40 of 48) scored ≥70%.<br><br>Shown are the average test score and the percentage of students that met the standard for the last five years.<br><br>2019-20 77.0 83%<br>2018-19 78.2 89%<br>2017-18 78.1 85%<br>2015-16 75.0 77%                                                                                                                                                                                                                                              | Y |   |
| Score Distribution                                 |                                     |                                          |                                                   |                    |                                                                                                                                                                                                                                                                                                                                       |                    |                                    |       |   |        |   |        |   |        |   |        |    |         |    |          |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| 0-49%                                              | 6                                   |                                          |                                                   |                    |                                                                                                                                                                                                                                                                                                                                       |                    |                                    |       |   |        |   |        |   |        |   |        |    |         |    |          |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| 50-59%                                             | 0                                   |                                          |                                                   |                    |                                                                                                                                                                                                                                                                                                                                       |                    |                                    |       |   |        |   |        |   |        |   |        |    |         |    |          |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| 60-69%                                             | 2                                   |                                          |                                                   |                    |                                                                                                                                                                                                                                                                                                                                       |                    |                                    |       |   |        |   |        |   |        |   |        |    |         |    |          |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| 70-79%                                             | 9                                   |                                          |                                                   |                    |                                                                                                                                                                                                                                                                                                                                       |                    |                                    |       |   |        |   |        |   |        |   |        |    |         |    |          |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| 80-89%                                             | 20                                  |                                          |                                                   |                    |                                                                                                                                                                                                                                                                                                                                       |                    |                                    |       |   |        |   |        |   |        |   |        |    |         |    |          |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| 90-100%                                            | 11                                  |                                          |                                                   |                    |                                                                                                                                                                                                                                                                                                                                       |                    |                                    |       |   |        |   |        |   |        |   |        |    |         |    |          |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |
| Average:                                           | 77.0%                               |                                          |                                                   |                    |                                                                                                                                                                                                                                                                                                                                       |                    |                                    |       |   |        |   |        |   |        |   |        |    |         |    |          |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |

| 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 76.0 85%<br>The percentage of students meeting the 70% benchmark has exceed 80% for the last three years.<br>This shows that students demonstrate an ability to acquire and analyze knowledge about the natural world. |                                    |

**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<br>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. | 29                 | <div>This table summarizes student scores.</div> <table><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>1</td></tr><tr><td>80-89%</td><td>13</td></tr><tr><td>90-100%</td><td>15</td></tr><tr><td>Average:</td><td>88.2%</td></tr></tbody></table> | Score Distribution |                                    | 0-49% | 0 | 50-59% | 0 | 60-69% | 0 | 70-79% | 1 | 80-89% | 13 | 90-100% | 15 | Average: | 88.2% | <div>The average test score was 88%.</div> <div>100% (29 of 29) of students scored <math>\geq 70\%</math>.</div> <div>Shown are the average test score and the percentage of students that met the standard for the last five years.</div> <div>2019-20 88.2 100%</div> <div>2018-19 85.9 100%</div> <div>2017-18 95.1 100%</div> <div>2016-17 87.3 100%</div> <div>2015-16 86.6 100%</div> <div>Students have met the desired standard in every</div> | Y |
| Score Distribution                 |                                                                                               |                                           |                                                 |                    |                                                                                                                                                                                                                                                                                                                                                                                                      |                    |                                    |       |   |        |   |        |   |        |   |        |    |         |    |          |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                        |   |
| 0-49%                              | 0                                                                                             |                                           |                                                 |                    |                                                                                                                                                                                                                                                                                                                                                                                                      |                    |                                    |       |   |        |   |        |   |        |   |        |    |         |    |          |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                        |   |
| 50-59%                             | 0                                                                                             |                                           |                                                 |                    |                                                                                                                                                                                                                                                                                                                                                                                                      |                    |                                    |       |   |        |   |        |   |        |   |        |    |         |    |          |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                        |   |
| 60-69%                             | 0                                                                                             |                                           |                                                 |                    |                                                                                                                                                                                                                                                                                                                                                                                                      |                    |                                    |       |   |        |   |        |   |        |   |        |    |         |    |          |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                        |   |
| 70-79%                             | 1                                                                                             |                                           |                                                 |                    |                                                                                                                                                                                                                                                                                                                                                                                                      |                    |                                    |       |   |        |   |        |   |        |   |        |    |         |    |          |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                        |   |
| 80-89%                             | 13                                                                                            |                                           |                                                 |                    |                                                                                                                                                                                                                                                                                                                                                                                                      |                    |                                    |       |   |        |   |        |   |        |   |        |    |         |    |          |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                        |   |
| 90-100%                            | 15                                                                                            |                                           |                                                 |                    |                                                                                                                                                                                                                                                                                                                                                                                                      |                    |                                    |       |   |        |   |        |   |        |   |        |    |         |    |          |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                        |   |
| Average:                           | 88.2%                                                                                         |                                           |                                                 |                    |                                                                                                                                                                                                                                                                                                                                                                                                      |                    |                                    |       |   |        |   |        |   |        |   |        |    |         |    |          |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                        |   |

| A.<br>Course | B.<br>Assessment Measures | C.<br>Performance Standards | D.<br>Sampling Methods | E.<br>Sample Size (N) | F.<br>Results | G.<br>Conclusions                                                                                                     | H.<br>Performance Standards Met (Y/N) |
|--------------|---------------------------|-----------------------------|------------------------|-----------------------|---------------|-----------------------------------------------------------------------------------------------------------------------|---------------------------------------|
|              |                           |                             |                        |                       |               | year that is has been assessed. This shows students are meeting the goal of effective written & visual communication. |                                       |

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

| A.<br>Course                       | B.<br>Assessment Measures | C.<br>Performance Standards               | D.<br>Sampling Methods                          | E.<br>Sample Size (N) | F.<br>Results                                                                                                                                                                                                                                                                                                                                                                                       | G.<br>Conclusions  | H.<br>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. | 29                    | <div>This table summarizes student scores.</div> <table><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>1</td></tr><tr><td>60-69%</td><td>0</td></tr><tr><td>70-79%</td><td>9</td></tr><tr><td>80-89%</td><td>13</td></tr><tr><td>90-100%</td><td>6</td></tr><tr><td>Average:</td><td>82.0%</td></tr></tbody></table> | Score Distribution |                                       | 0-49% | 0 | 50-59% | 1 | 60-69% | 0 | 70-79% | 9 | 80-89% | 13 | 90-100% | 6 | Average: | 82.0% | <div>The average test score was 82%.</div> <div>97% (28 of 29) of students scored <math>\geq 70\%</math>.</div> <div>Shown are the average test score and the percentage of students that met the standard for the last five years.</div> <table><tbody><tr><td>2019-20</td><td>82.0</td><td>97%</td></tr><tr><td>2018-19</td><td>89.6</td><td>100%</td></tr><tr><td>2017-18</td><td>86.1</td><td>95%</td></tr><tr><td>2016-17</td><td>88.1</td><td>100%</td></tr><tr><td>2015-16</td><td>84.4</td><td>88%</td></tr></tbody></table> <div>Students have 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.</div> | 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% | Y |
| Score Distribution                 |                           |                                           |                                                 |                       |                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                                       |       |   |        |   |        |   |        |   |        |    |         |   |          |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |      |     |         |      |      |         |      |     |         |      |      |         |      |     |   |
| 0-49%                              | 0                         |                                           |                                                 |                       |                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                                       |       |   |        |   |        |   |        |   |        |    |         |   |          |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |      |     |         |      |      |         |      |     |         |      |      |         |      |     |   |
| 50-59%                             | 1                         |                                           |                                                 |                       |                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                                       |       |   |        |   |        |   |        |   |        |    |         |   |          |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |      |     |         |      |      |         |      |     |         |      |      |         |      |     |   |
| 60-69%                             | 0                         |                                           |                                                 |                       |                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                                       |       |   |        |   |        |   |        |   |        |    |         |   |          |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |      |     |         |      |      |         |      |     |         |      |      |         |      |     |   |
| 70-79%                             | 9                         |                                           |                                                 |                       |                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                                       |       |   |        |   |        |   |        |   |        |    |         |   |          |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |      |     |         |      |      |         |      |     |         |      |      |         |      |     |   |
| 80-89%                             | 13                        |                                           |                                                 |                       |                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                                       |       |   |        |   |        |   |        |   |        |    |         |   |          |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |      |     |         |      |      |         |      |     |         |      |      |         |      |     |   |
| 90-100%                            | 6                         |                                           |                                                 |                       |                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                                       |       |   |        |   |        |   |        |   |        |    |         |   |          |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |      |     |         |      |      |         |      |     |         |      |      |         |      |     |   |
| Average:                           | 82.0%                     |                                           |                                                 |                       |                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                                       |       |   |        |   |        |   |        |   |        |    |         |   |          |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |      |     |         |      |      |         |      |     |         |      |      |         |      |     |   |
| 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%                                       |                                                 |                       |                                                                                                                                                                                                                                                                                                                                                                                                     |                    |                                       |       |   |        |   |        |   |        |   |        |    |         |   |          |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |      |     |         |      |      |         |      |     |         |      |      |         |      |     |   |

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

| A.<br>Course | B.<br>Assessment<br>Measures | C.<br>Performance<br>Standards | D.<br>Sampling<br>Methods | E.<br>Sample<br>Size<br>(N) | F.<br>Results | G.<br>Conclusions | H.<br>Performance<br>Standards Met<br>(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 and #2              | BIOL 1114. Dr. Overall wants to integrate online exercises from the McGraw-Hill CONNECT learning platform into the graded curriculum for her sections.       | Freshman often struggle in lower level science courses. It is hoped this additional content will help students develop better science proficiency. | Studies of the effectiveness on digital learning platforms like CONNECT report greater student engagement, higher student confidence, greater course completion rates, and high grades.           |
| SLO #1 and #2              | BIOL 1134. Dr. Overall wants to integrate online exercises from the Cengage MINDTAP learning platform into the graded curriculum for her sections.           | Freshman often struggle in lower level science courses. It is hoped this additional content will help students develop better science proficiency. | Studies of the effectiveness on digital learning platforms like MINDTAP report greater student engagement, higher student confidence, greater course completion rates, and high grades.           |
| SLO #1 and #2              | BIOL 1144. Dr. Overall wants to integrate online exercises from the Pearson MASTERING BIOLOGY learning platform into the graded curriculum for her sections. | Freshman often struggle in lower level science courses. It is hoped this additional content will help students develop better science proficiency. | Studies of the effectiveness on digital learning platforms like MASTERING BIOLOGY report greater student engagement, higher student confidence, greater course completion rates, and high grades. |
| SLO #1 and #2              | Weekly lab meetings will be held for all lab instructors. Applies to                                                                                         | The department relies heavily on adjuncts for the lab component of                                                                                 | Weekly meetings with an established lab coordinator will help improve                                                                                                                             |

| General Education Outcomes | Instructional or Assessment Changes                                                                                                                              | Rationale for Changes                                                                                                                                                                                                                                                                                                                          | Impact of Planned Changes on Student Learning and Other Considerations.                                                                                                                        |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                            | lab sections of BIOL 1114/1144.                                                                                                                                  | BIOL 1114 and 1144. The total number of sections for these two courses combined typically exceeds 30. As many as six different instructors are needed to cover these sections, with around two-thirds covered by adjuncts.                                                                                                                     | consistency of content and rigor.                                                                                                                                                              |
| SLO #1 and #2              | Instructor manual is being compiled for assist adjuncts with lab set up, grading, and assessment. Applies to lab sections of BIOL 1114/1144.                     | A typical academic year has 30+ sections of BIOL 1114/1144 that need to be covered. Most of these are taught by adjunct instructors. Consequently, in any given year, we of typically training 1-2 new adjuncts for this role. A manual to help new instructors will help address many of the common issues that these new employees may have. | A manual will help better prepare our adjuncts in their role.                                                                                                                                  |
| SLO #1 and #2              | Lab curriculum redeveloped to include more science literacy and computer skills. Applies to lab sections of BIOL 1114/1144.                                      | How the institution addresses the OSHRE requirement for computer proficiency is currently in flux. As a result, the Dept of Biology is planning to more aggressively address these skills within our own courses.                                                                                                                              | Regular lab exercises incorporating computer-based skills should help promote computer proficiency.                                                                                            |
| SLO #1 and #2              | Online lab sections are going to be made more standardized between instructors with assessment questions. Applies to lab sections of BIOL 1114/1144.             | The department expects a growth in online instruction. Ensuring consistency of content and rigor between online and on-ground sections is needed.                                                                                                                                                                                              | Consistency of rigor and content across online and on-ground sections will ensure the students graduating with a biology degree will receive quality education regardless of mode of delivery. |
| SLO #1 and #2              | 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. | The department expects a growth in online instruction. Ensuring consistency of content and rigor between online and on-ground sections is needed.                                                                                                                                                                                              | Consistency of rigor and content across online and on-ground sections will ensure the students graduating 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<br>(e.g., collect data, analyze data, prepare report, review report, etc.) | Signatures                              |
|---------------------------------------|------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| Full-time Faculty<br>Craig Zimmermann | Provided data, analyzed data, prepared report                                                              | Craig Zimmermann 5/23/20<br>28 May 2020 |
| Jerry Bowen                           | Provided data and reviewed report                                                                          | Jerry Bowen 28 May 2020                 |
| Mark Peadar                           | Provided data and reviewed report                                                                          | Mark Peadar via email                   |
| Uduak Udoh                            | Provided data and reviewed report                                                                          | Lisa Overall via email                  |
| Lisa Overall                          | Provided data and reviewed report                                                                          | Cheyenne Olson 5/28/20                  |
| Cheyenne Olson                        | Provided data and reviewed report                                                                          | 7/29/20                                 |
| Jae-Ho Kim                            | Reviewed report                                                                                            | 5/28/20                                 |
| Jin Seo                               | Reviewed report                                                                                            |                                         |
| Adjunct Faculty<br>Janette Tuckey     | Provided data                                                                                              |                                         |
| Rance Kingfisher                      | Provided data                                                                                              |                                         |
| Paige Hankins                         | Provided data                                                                                              |                                         |
| Gifty Benson                          | Provided data                                                                                              |                                         |

B. Reviewed by:

| Titles          | Names       | Signatures  | Date        |
|-----------------|-------------|-------------|-------------|
| Department Head |             | Jerry Bowen | 28 May 2020 |
| Dean            | Kath Martin | Kath Martin | 6/3/2020    |