

**Findings****Finding per Measure**▼ **BIOL 105 Human Biology Course Outcomes**

## Outcome

**Outcome: Outcome 1.1: Cell Structures and Processes**

Students will demonstrate knowledge of human cell structure, biological macromolecules and basic metabolic processes.

- ▼ **Measure:** Students will demonstrate knowledge of human cell structure, biological macromolecules, and basic metabolic processes.

|                           |   |
|---------------------------|---|
| CRN:                      | 74338   |
| Proficiency Standard:     | 70% of students will demonstrate knowledge of human cell structure, biological macromolecules, and basic metabolic processes. |
| Faculty Last Name, First: | Isaac, Shirley  |
| Semester, Year:           | Fall, 2020  |

Findings for Students will demonstrate knowledge of human cell structure, biological macromolecules, and basic metabolic processes.

|                          |   |
|--------------------------|---|
| Summary of Findings:     | 70% of students will demonstrate knowledge of human cell structure, biological macromolecules, and basic metabolic processes. |
| Results :                | Class Proficiency Status: Met   |
| Students Proficient:     | 18  |
| Students Not Proficient: | 6   |

▼ **Measure:** Course Assignment 1

|                           |   |
|---------------------------|---|
| CRN:                      | 36249   |
| Proficiency Standard:     | 70% of students will demonstrate knowledge of human cell structures and their respective functions. |
| Faculty Last Name, First: | Fierro, Melanie   |
| Semester, Year:           | Spring 2018   |

Findings for Course Assignment 1

|                          |  |
|--------------------------|--|
| Summary of Findings:     | On the first course assignment for the spring 2018 term, 91% of the students assessed demonstrated proficiency in identifying the functions of various human cell structures. This assignment involved the use of analogies for each of the cell structures. |
| Results :                | Class Proficiency Status: Exceeded   |
| Students Proficient:     | 42   |
| Students Not Proficient: | 4  |

▼ **Measure:** Exam 1

|                           |   |
|---------------------------|---|
| CRN:                      | 37885   |
| Proficiency Standard:     | 70% of students will demonstrate knowledge of human cell structure, biological macromolecules, and basic metabolic processes. |
| Faculty Last Name, First: | Price, Cody   |
| Semester, Year:           | Spring, 2021  |

Findings for Exam 1

*No Findings Added*

▼ **Measure:** Lecture Exam 1

|                           |   |
|---------------------------|---|
| CRN:                      | 36249   |
| Proficiency Standard:     | 70% of students will demonstrate knowledge of human cell structure, biological macromolecules, and basic metabolic processes. |
| Faculty Last Name, First: | Fierro, Melanie   |
| Semester, Year:           | Spring, 2018  |

Findings for Lecture Exam 1

|                      |   |
|----------------------|---|
| Summary of Findings: | On the first lecture exam for the spring 2018 term, 56% of the students assessed demonstrated proficiency in their knowledge of human cell structures, biological macromolecules, and basic metabolic processes. Proficiency was not achieved for this course section on this measure. Potential explanations for low percentage of students achieving proficiency may be: 1) For many of the students enrolled in this course, this is the first college-level science course they have taken, and may be the first science course they have had in a few years or more. These students often have yet to learn the study skills necessary to properly retain the content, and often don't even know how to go about study |
|----------------------|---|

the material for the purpose of long-term retention. 2) Many of the exam questions are application or synthesis level questions. Students struggle with these question types when they do not have a solid foundation in critical thinking methods.

Results : Class Proficiency Status: Not Met

Students Proficient: 26

Students Not Proficient: 20

### Outcome: Outcome 1.2: Human Body Systems

Students will demonstrate knowledge of the basic anatomy and physiology (structure versus function) of the human body systems.

#### ▼ Measure: Course Assignment: Urinary System

CRN: 35516

Proficiency Standard: 70% of the students assessed will demonstrate the ability to apply knowledge of the basic anatomy and physiology (structure versus function) of the human body systems.

Faculty Last Name, First: Fierro, Melanie

Semester, Year: Spring, 2019

#### Findings for Course Assignment: Urinary System

Summary of Findings: During the spring 2019 assessment cycle, 40 of the 48 students (83%) assessed demonstrated proficiency in their knowledge of basic anatomy and physiology (structure versus function) on a course assignment relating to the urinary system.

Results : Class Proficiency Status: Exceeded

Students Proficient: 40

Students Not Proficient: 8

#### ▼ Measure: Exam 2

CRN: 37885

Proficiency Standard: 70% of students will demonstrate knowledge of human cell structure,

biological macromolecules, and basic metabolic processes.

Faculty Last Name, First: Price, Cody  
Semester, Year: Spring, 2021

Findings for Exam 2

*No Findings Added*

▼ **Measure:** Lecture Exam 3

CRN: 35516  
Proficiency Standard: 70% of the students assessed will demonstrate the ability to apply knowledge of the basic anatomy and physiology (structure versus function) of the human body systems.  
Faculty Last Name, First: Fierro, Melanie  
Semester, Year: Spring, 2019

Findings for Lecture Exam 3

Summary of Findings: On the third lecture exam for the spring 2019 term, 25 of 48 (52%) of the students assessed were proficient in their ability to demonstrate knowledge of basic anatomy and physiology of the human body systems. Proficiency was not achieved for this course section on this measure. Potential explanations for low percentage of students achieving proficiency may be: 1) For many of the students enrolled in this course, this is the first college-level science course they have taken, and may be the first science course they have had in a few years or more. These students often have yet to learn the study skills necessary to properly retain the content, and often don't even know how to go about study the material for the purpose of long-term retention. 2) Many of the exam questions are application or synthesis level questions. Students struggle with these question types when they do not have a solid foundation in critical thinking methods. Although greater efforts have been made to promote good study habits and introduce test-taking strategies, more work is clearly needed.

Results : Class Proficiency Status: Not Met

Students Proficient: 25

Students Not Proficient: 23

**Outcome: Outcome 1.3: Homeostasis**

Students will demonstrate understanding of how human body systems function in order to maintain homeostasis.

▼ **Measure:** Exam 2

CRN: 75617  
 Proficiency Standard: 70% of students will demonstrate understanding of how human body systems function in order to maintain homeostasis.  
 Faculty Last Name, First: Behmer, Elizabeth  
 Semester, Year: Fall, 2019

Findings for Exam 2

Summary of Findings: 60.7% of students demonstrated proficiency for this outcome; proficiency has not been met.  
 Results : Class Proficiency Status: Not Met  
 Students Proficient: 31  
 Students Not Proficient: 20

▼ **Measure:** Final exam

CRN: 37884  
 Proficiency Standard: 70% of students will demonstrate understanding of how human body systems function in order to maintain homeostasis.  
 Faculty Last Name, First: Fierro, Melanie  
 Semester, Year: Spring, 2020

Findings for Final exam

Summary of Findings: On the cumulative final exam for the spring 2020 semester, 81.6% of the students assessed demonstrated proficiency in their knowledge of how human body systems function in order to maintain homeostasis. Proficiency for this outcome has been exceeded. A potential explanation for the success with this outcome may be the modifications made to the course assignments, allowing students more opportunities to work with content and utilize supplemental course resources as much as possible. Another possibility relates to the transition to online learning mid-semester. Lectures were recorded and posted to Canvas, where students could then download and listen to them whenever they chose and as many times as they chose. They had the opportunity to review entire lectures or select portions of lectures, which many students identified as being helpful.

|                          |                                    |
|--------------------------|------------------------------------|
| Results :                | Class Proficiency Status: Exceeded |
| Students Proficient:     | 40                                 |
| Students Not Proficient: | 9                                  |

▼ **Measure:** Final exam

|                           |   |
|---------------------------|---|
| CRN:                      | 74338   |
| Proficiency Standard:     | 70% of students will demonstrate understanding of how human body systems function in order to maintain homeostasis. |
| Faculty Last Name, First: | Fierro, Melanie   |
| Semester, Year:           | Fall, 2019  |

Findings for Final exam

|                      |  |
|----------------------|--|
| Summary of Findings: | On the cumulative final exam for the fall 2019 semester, 77% of the students assessed demonstrated proficiency in their knowledge of how human body systems function in order to maintain homeostasis. Proficiency for this outcome has been exceeded. In past terms, sections for this course have struggled to achieve proficiency for the SLOs, which has prompted the lead instructor to revise coursework to give students more opportunities to work with the content and utilize the provided course resources as much as possible. Students continue to demonstrate difficulty in managing higher-level / analysis and synthesis style questions; thus, developing this skill will be an area of focus in terms to come. |
|----------------------|--|

|                          |                                    |
|--------------------------|------------------------------------|
| Results :                | Class Proficiency Status: Exceeded |
| Students Proficient:     | 28                                 |
| Students Not Proficient: | 8                                  |

▼ **Measure:** Final Exam

|                           |   |
|---------------------------|---|
| CRN:                      | 37885   |
| Proficiency Standard:     | 70% of students will demonstrate knowledge of human cell structure, biological macromolecules, and basic metabolic processes. |
| Faculty Last Name, First: | Price, Cody   |
| Semester, Year:           | Spring, 2021  |

Findings for Final Exam

*No Findings Added*▼ **Measure:** Lecture Exam

CRN: 37885  
 Proficiency Standard: 70% of students will demonstrate understanding of how human body systems function in order to maintain homeostasis.  
 Faculty Last Name, First: Ayala, Eduardo  
 Semester, Year: Spring, 2020

## Findings for Lecture Exam

Summary of Findings: 73% of students demonstrated proficiency in understanding how human body systems function in order to maintain homeostasis. Proficiency for this outcome has been exceeded.

Results : Class Proficiency Status: Exceeded

Students Proficient: 30  
 Students Not Proficient: 11

▼ **Measure:** Midterm exam

CRN: 35516  
 Proficiency Standard: 70% of students will demonstrate understanding of how human body systems function in order to maintain homeostasis.  
 Faculty Last Name, First: Hernandez, Eddie  
 Semester, Year: Spring, 2020

## Findings for Midterm exam

Summary of Findings: 87.5% of students demonstrated proficiency in understanding how human body systems function in order to maintain homeostasis.

Results : Class Proficiency Status: Exceeded

Students Proficient: 35  
 Students Not Proficient: 5

**Outcome: Outcome 1.4: Scientific Literacy**

Students will demonstrate the ability to acquire, read, evaluate, apply and cite scientific literature, and use basic scientific language in written assignments.

▼ **Measure:** Discussion Forum

|                           |  |
|---------------------------|--|
| CRN:                      | 75617  |
| Proficiency Standard:     | 70% of students will demonstrate the ability to acquire, read, evaluate, apply and cite scientific literature, and use basic scientific language in written assignments. |
| Faculty Last Name, First: | Fierro, Melanie  |
| Semester, Year:           | Fall, 2020   |

Findings for Discussion Forum

**Summary of Findings:** Of 26 students assessed, 21 (81%) demonstrated proficiency in their ability to acquire, read, evaluate, apply and cite scientific literature and use basic scientific language in written assignments. Five students (19%) did not demonstrate proficiency for this outcome, though it should be noted that 3 of the 5 did not complete the assignment. Thus, of the 23 students that completed the assignment, only 2 (9%) did not demonstrate proficiency. The third discussion forum was used as the measure for this outcome, allowing for the instructor to provide corrective feedback on the first two forums as a means of formative assessment.

It should be noted that the total number of students assessed during this particular term is quite low; this may be attributed to the transition to remote learning due to COVID-19, as many students have struggled with the shift in format. Course instructors are working to identify additional strategies to lend to course retention and success.

|                                 |                                    |
|---------------------------------|------------------------------------|
| <b>Results :</b>                | Class Proficiency Status: Exceeded |
| <b>Students Proficient:</b>     | 21                                 |
| <b>Students Not Proficient:</b> | 5                                  |

▼ **Measure:** Discussion Forum

|                       |  |
|-----------------------|--|
| CRN:                  | 35516  |
| Proficiency Standard: | 70% of students will demonstrate the ability to acquire, read, evaluate, apply, and cite scientific literature, and use basic scientific |



language in written assignments.

Faculty Last Name, First: Fierro, Melanie

Semester, Year: Spring, 2021

#### Findings for Discussion Forum

**Summary of Findings:** Of 33 students assessed, 29 (87.8%) demonstrated proficiency in their ability to acquire, read, evaluate, apply, and cite scientific literature and use basic scientific language in written assignments. Four students (12.2%) did not demonstrate proficiency for this outcome. The third discussion forum was used as the measure for this outcome, allowing for the instructor to provide corrective feedback on the first two forums as a means of formative assessment.

As indicated during the fall 2020 term, the number of students assessed is lower than expected based on the enrollment cap for this course. This may be attributed to courses still being offered remotely, which has proven challenging for many students. Course instructors continue to work to identify strategies to improve course retention and success rates.

**Results :** Class Proficiency Status: Exceeded

**Students Proficient:** 29

**Students Not Proficient:** 4

#### ▼ **Measure:** Discussion Forum

**CRN:** 37784

**Proficiency Standard:** 70% of students will demonstrate the ability to acquire, read, evaluate, apply, and cite scientific literature, and use basic scientific language in written assignments.

**Faculty Last Name, First:** Standen, Susan

**Semester, Year:** Spring, 2021

#### Findings for Discussion Forum

**Summary of Findings:** Of 23 students assessed, 18 (78%) demonstrated proficiency in their ability to acquire, read, evaluate, apply, and cite scientific literature and use basic scientific language in written assignments. Five students (22%) did not demonstrate proficiency for this outcome.

The number of students assessed is lower than expected based on the enrollment cap for this course. This may be attributed to courses still being offered remotely, which has proven challenging for many students. Course instructors continue to

work to identify strategies to improve course retention and success rates.

Results : Class Proficiency Status: Met  
 Students Proficient: 18  
 Students Not Proficient: 5

▼ **Measure:** Homework Assignment #2

CRN: 37985  
 Proficiency Standard: 70% of students will demonstrate the ability to acquire, read, evaluate, apply, and cite scientific literature, and use basic scientific language in written assignments.  
 Faculty Last Name, First: Isaac, Shirley  
 Semester, Year: Winter Intercession, 2021

Findings for Homework Assignment #2

Summary of Findings: More than 75% of students demonstrated the ability to acquire, read, evaluate, apply, and cite scientific literature, and use basic scientific language in written assignments.  
 Results : Class Proficiency Status: Exceeded  
 Students Proficient: 29  
 Students Not Proficient: 9

▼ **Measure:** Quiz 1

CRN: 37885  
 Proficiency Standard: 70% of students will demonstrate knowledge of human cell structure, biological macromolecules, and basic metabolic processes.  
 Faculty Last Name, First: Price, Cody  
 Semester, Year: Spring, 2021

Findings for Quiz 1

*No Findings Added*

## 3. Outcomes

**3.1 Assessment Timeline and Closing the Loop**

## ▼ Attachment Section

**Files :**

- 📎 BIOL 105 CTL Fall 2020.pdf
- 📎 BIOL 105L CTL Fall 2020.pdf
- 📎 BIOL 112 CTL Fall 2020.pdf
- 📎 BIOL 120 CTL Fall 2020 .docx
- 📎 BIOL 120L CTL Fall 2020.docx
- 📎 Closing the Loop Bio 101 Fall20.docx
- 📎 Closing the Loop Bio 111 Fall20.docx
- 📎 Closing the Loop Bio 111L Fall20.docx
- 📎 outcome timeline 101, 105, 105L.docx
- 📎 outcomes timeline 111, 111L, 112.docx
- 📎 outcomes timeline 120, 120L.docx

## ▼ Text and Image Section

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## Directions

After reviewing the data in Taskstream for a course, dialogue and identify action items to improve student learning outcomes/course level outcomes. Once completed, upload to the Annual Program Plan in Taskstream and provide a copy to your dean.

|                                    |   |
|------------------------------------|---|
| <b>Course Name &amp; Number</b>    | Human Biology lecture / BIOL105   |
| <b>Course Outcome(s) Discussed</b> | Outcome 1.3: Homeostasis – Students will demonstrate understanding of how human body systems function in order to maintain homeostasis. |
| <b>Discussion Participants</b>     | Eduardo Ayala, Elizabeth Behmer, Melanie Fierro   |
| <b>Date of Discussion</b>          | September 17, 2020 and September 18, 2020   |

- 1. What themes of success emerge for this course?** What do the outcomes data and proficiency standards suggest about the ways in which faculty can build upon these achievements? For this item, themes of successes should reference course outcomes data and standards of proficiency.

A theme of success that emerges for this course is that the majority of students are demonstrating proficiency above the standard of 70%, with four of the five sections assessed demonstrating proficiency between 73-87.5%. Only one course section assessed did not meet proficiency (60.7%). This would indicate that most students have a solid grasp on concepts relating to human body system function and the maintenance of homeostasis.

Faculty members can build upon these achievements by working to develop course resources that permit student to practice with lecture content and build their higher-order thinking skills. Providing students with additional opportunities to interact with the course materials (required text, lecture materials, supplemental study tools, etc.) will enhance their comprehension and retention of the content. Regular collaboration amongst instructors to share best practices and successful strategies would also help to build upon these achievements.

- 2. What challenges are faced by students with respect to acquiring the knowledge and/or skills identified in the course outcomes?** Responses should reference course outcomes data and proficiency standards.

Challenges that our students face with respect to acquiring the knowledge and/or skills include lack of required materials and personal struggles that prevent students from attending class, completing assignments or spending the appropriate amount of time

[Type here]

studying to assimilate the content as expected. This may hold especially true during the spring 2020 term, as classes made the transition online due to the public health crisis involving COVID-19. During regular face-to-face instruction, personal struggles are still present, but may take other forms (single, working parents; income struggles; work/life balance; etc.).

With respect to general preparation, one challenge that many students face is lack of sufficient general academic preparation with respect to reading, writing and mathematical skills that are necessary for working with the course text and acquiring content.

**3. What classroom strategies for increasing equity in this course should be implemented?**

(Specify the relevant course outcome(s) associated with equity minded strategies and practices.)

Providing our students with alternate options for demonstrating competency for each outcome would improve equity in this course. For example, if a given lecture activity requires the students to view a web-based simulation and answer questions, perhaps the instructor could allow a student who does not have access to an electronic device or Internet to receive a written prompt and construct an appropriate response relating to the concept.

Working toward identifying OER materials would improve course equity for students who do not have the funds to purchase the required course text. Although the LRC has a copy of the text on file for loan, the 2-hour time limit in combination with the demand based on the enrollment for multiple sections makes this a less than ideal solution.

As instructors, we must commit to consistent and effective communication. We must be available to our students and respond to inquiries within a reasonable amount of time (in alignment with college policy and expectations).

**4. Based on the challenges identified in Question 2 and/or the equity-minded practices identified in question 3, what specific actions will be taken to improve course learning outcomes. Specify the relevant course outcome(s).**

The course lead will coordinate the endeavor to identify appropriate OER materials to alleviate concerns for textbooks costs being prohibitive for our students. Course faculty will engage in dialog regularly to identify best practices and implement multiple forms of assessment whenever feasible.

[Type here]

- 5. What resources are needed to ensure improvements in course outcomes come to fruition?** Resource needs should correspond to classroom strategies identified in Questions 2 and 3. Specify the resources needed to support instructional strategies and/or equity-minded practices associated with improvements in student learning outcomes.

Resources needed by students to support equity-minded practices would include having a sufficient college supply of laptops, microphones, hotspots, etc. for students to borrow, particularly during the extended period of remote learning that is taking place and likely to continue. Even when not engaged in remote learning, having the devices and associated technology available to students for use in their own homes and at their convenience is critical if they are to work with the content to the extent necessary to succeed.

Additional resources might include opportunities to receive financial aid to help pay for courses and associated materials, reducing the number of hours the students work while attending school and thus permitting greater focus on their academic performance. Increasing access to biology tutors in the MSC would also be of tremendous benefit, as many of the students in this course are non-science majors.

- 6. When it comes time in the curriculum process for course revision, what (if any) changes need to be made to this course or its outcomes?**

Changes to the curriculum that may be considered include modification of the course text to OER and inclusion of common, structured activities to promote study skills, higher-order thinking (critical thinking) capabilities and test-taking skills. The inclusion of supplemental instruction (SI) sessions for abstract / complex concepts could be integrated into the lecture grade each term to lend to concept understanding and retention.

**Please save this document and upload it to your Annual Program Plan. Save the document with the following Name: course subject, course number, "CTL" and semester of submission in the document title (e.g. ART 101 CTL Fall 2020.)**