UNIVERSITY OF ARKANSAS
PULASKI TECH

# Assessment Report:
# 2019-2020
# Human Anatomy & Physiology I

**BIOL 1304**
**ACTS 2404**

# Course-Level Learning Outcomes

## 1. What are the Course-Level Outcomes (CLOs)?

**Course Learning Outcomes: BIOL 1304 Human Anatomy & Physiology I (Class)**

1. **Body Organization** The student will explain, describe, discuss, recognize, and/or apply knowledge and understanding of the body organization (includes terms, basic biochemistry, cellular structure & function, metabolism, histology, & integumentary system)
2. **Musculoskeletal System** The student will explain, describe, discuss, recognize, and/or apply knowledge and understanding of the musculoskeletal system (includes muscular system, skeletal system, & joints)
3. **Nervous System** The student will explain, describe, discuss, recognize, and/or apply knowledge and understanding of the nervous system (includes nervous system & general senses)

## 2. Which CLOs were addressed for this academic year? (2019-2020)

CLO # 1 (Body organization)

CLO # 2 (Musculoskeletal system)

CLO # 3 (Nervous system)

## 3. Which CLOs are being addressed in your assessment plan next academic year? (2020-2021)

CLO # 1 (Body organization)

CLO # 2 (Musculoskeletal system)

CLO # 3 (Nervous system)

## 4. Explain the assessment cycle.

Standardized assessments for CLOs 1, 2, & are conducted each semester.

## 5. What are the assessment methods? Are they direct or indirect?

CLO 1(body organization): Direct

**1)** Standardized Essay Question. Topic: Protein Synthesis. Bloom's Taxonomy Level 3. Using a common written assessment in the form of an essay the student will explain protein synthesis as it relates to body organization and cellular function. Essay is administered with exam 1.

**2)** Standardized Essay Question. Topic: Integumentary System – Classification of Burns. Bloom's Taxonomy Level 1-2. Using a common written assessment in the form of an essay the student will explain the classification of burns as they relate to the integumentary system. Essay is administered with exam 2.

3) Standardized online quizzes for each lab manual unit covering CLO # 1. Bloom's Taxonomy Level 2. Using a computer-generated random pool of questions, the student will recognize and/or apply knowledge and understanding of body organization which includes anatomy and physiology terms, basic biochemistry, cellular structure & function, metabolism, histology, and the integumentary system. Administered through Pearson's Mastering A&P.

CLO 1 (body organization) and CLO 2 (musculoskeletal system): Direct

1) Standardized Essay Question. Topic: Homeostasis of Calcium ion. Bloom's Taxonomy Level 3. Using a common written assessment in the form of an essay the student will explain the homeostasis of calcium ion as it relates to body organization (homeostasis), and the function of bone. Essay is administered with exam 2.

CLO 2 (musculoskeletal system): Direct

1) Standardized Essay Question. Topic: Muscle Contraction Physiology. Bloom's Taxonomy Level 3. Using a common written assessment in the form of an essay the student will explain muscle contraction physiology as it relates to muscular system. Essay is administered with exam 3.
2) Standardized online quizzes for each lab manual unit covering CLO # 2. Bloom's Taxonomy Level 1-2. Using a computer-generated random pool of questions, the student will recognize and/or apply knowledge and understanding of body organization which includes anatomy and physiology terms, basic biochemistry, cellular structure & function, metabolism, histology, and the integumentary system. Administered through Pearson's Mastering A&P.

CLO 3: Direct

1) Standardized Essay Question. Topic: Autonomic Nervous System (sympathetic/parasympathetic). Bloom's Taxonomy Level 1-2. Using a common written assessment in the form of an essay the student will explain describe (compare) the divisions of the Autonomic Nervous System as it relates to the nervous system. Essay is administered with exam 4.
2) Standardized online quizzes for each lab manual unit covering CLO # 3 Bloom's Taxonomy Level 2. Using a computer-generated random pool of questions, the student will recognize and/or apply knowledge and understanding of body organization which includes anatomy and physiology terms, basic biochemistry, cellular structure & function, metabolism, histology, and the integumentary system. Administered through Pearson's Mastering A&P.

## 6. What are the assessment goal(s)?

Success for each CLO will be measured with 70% of sections combined passing at 70+%.

## 7. What were the findings for this academic year? (2019-2020)

**CLO # 1** (Body Organization)

**CLO # 2** (Musculoskeletal system)

**CLO # 3** (Nervous system)

**Assessment Method:** Online quizzes through Pearson's Mastering A&P.

In the spring of 2020 this assessment method had to be withdrawn due to an announcement by the Dean that assessment was not required to be administer online through Pearson's Mastering A&P; therefore, faculty were not required to participate in any assessment administered online through Pearson's Mastering A&P. Since the assessment method was withdrawn there is no report for this assessment method.

| CLO # 1 **(Body organization)**<br>Assessment Method: **Essay – Protein synthesis** | Fall 2019 | Spring 2020 |
|---|---|---|
| Total Overall percentage of students who passed with a score of 70+% | 15% | 17% |
| Total Overall # of students assessed | 172 | 157 |
| Total Overall # of students who successfully completed assessment with a score of 70+% | 26 | 27 |
| Total % of Traditional students who passed with a score of 70+% | 18% | 24% |
| Total # of Traditional students assessed | 128 | 104 |



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|---|---|---|
| Total # of Traditional students who successfully completed assessment with a score of 70+% | 23 | 25 |
| Total % of Online students who passed with a score of 70+% | 7% | 4% |
| Total # of Online students assessed | 44 | 53 |
| Total # of Online students who successfully completed assessment with a score of 70+% | 3 | 2 |
| Total Hybrid students assessed | N/A | N/A |
| Total Concurrent students assessed | 0 | 0 |

| CLO # 1 **(Body organization)**<br>Assessment Method: **Essay – Integumentary system/burns** | Fall 2019 | Spring 2020 |
|---|---|---|
| Total Overall percentage of students who passed with a score of 70+% | 73% | 64% |
| Total Overall # of students assessed | 179 | 115 |
| Total Overall # of students who successfully completed assessment with a score of 70+% | 130 | 74 |
| Total % of Traditional students who passed with a score of 70+% | 74% | 64% |
| Total # of Traditional students assessed | 133 | 93 |
| Total # of Traditional students who successfully completed assessment with a score of 70+% | 98 | 53 |
| Total % of Online students who passed with a score of 70+% | 70% | 95% |
| Total # of Online students assessed | 46 | 22 |
| Total # of Online students who successfully completed assessment with a score of 70+% | 32 | 21 |
| Total Hybrid students assessed | N/A | N/A |
| Total Concurrent students assessed | 0 | 0 |

| CLO # 1 **(Body organization/homeostasis) &**<br>CLO # 2 **(Musculoskeletal system)**<br>Assessment Method: **Essay – Calcium ion Homeostasis** | Fall 2019 | Spring 2020 |
|---|---|---|
| Total Overall percentage of students who passed with a score of 70+% | N/A | 57% |
| Total Overall # of students assessed | N/A | 116 |
| Total Overall # of students who successfully completed assessment with a score of 70+% | N/A | 66 |
| Total % of Traditional students who passed with a score of 70+% | N/A | 55% |
| Total # of Traditional students assessed | N/A | 93 |
| Total # of Traditional students who successfully completed assessment with a score of 70+% | N/A | 51 |
| Total % of Online students who passed with a score of 70+% | N/A | 65% |
| Total # of Online students assessed | N/A | 23 |



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|---|---|---|
| Total # of Online students who successfully completed assessment with a score of 70+% | N/A | 15 |
| Total Hybrid students assessed | N/A | N/A |
| Total Concurrent students assessed | 0 | 0 |

| CLO # 2 **(Musculoskeletal system)** Assessment Method: **Essay – Muscle contraction** | Fall 2019 | Spring 2020 |
|---|---|---|
| Total Overall percentage of students who passed with a score of 70+% | 45% | 41% |
| Total Overall # of students assessed | 154 | 125 |
| Total Overall # of students who successfully completed assessment with a score of 70+% | 70 | 51 |
| Total % of Traditional students who passed with a score of 70+% | 48% | 43% |
| Total # of Traditional students assessed | 113 | 109 |
| Total # of Traditional students who successfully completed assessment with a score of 70+% | 54 | 47 |
| Total % of Online students who passed with a score of 70+% | 39% | 25% |
| Total # of Online students assessed | 41 | 16 |
| Total # of Online students who successfully completed assessment with a score of 70+% | 16 | 4 |
| Total Hybrid students assessed | N/A | N/A |
| Total Concurrent students assessed | 0 | 0 |

| CLO # 3 **(Nervous System)** Assessment Method: **Essay – Autonomic nervous system (sympathetic/parasympathetic)** | Fall 2019 | Spring 2020 |
|---|---|---|
| Total Overall percentage of students who passed with a score of 70+% | 77% | 34% |
| Total Overall # of students assessed | 87 | 96 |
| Total Overall # of students who successfully completed assessment with a score of 70+% | 67 | 33 |
| Total % of Traditional students who passed with a score of 70+% | 77% | 35% |
| Total # of Traditional students assessed | 87 | 79 |
| Total # of Traditional students who successfully completed assessment with a score of 70+% | 67 | 28 |
| Total % of Online students who passed with a score of 70+% | N/A | 29% |
| Total # of Online students assessed | 0 | 17 |
| Total # of Online students who successfully completed assessment with a score of 70+% | 0 | 5 |
| Total Hybrid students assessed | N/A | N/A |
| Total Concurrent students assessed | 0 | 0 |

## 8. What is your analysis of the findings?

**CLO 1** (Body Organization)

Assessment Method: Essay – Protein Synthesis.

**Analysis of Results for Fall 2019** – Neither the traditional nor the online courses performed well in this assessment. The online did have a lower pass rate, but fewer students were assessed. Student lack understanding of protein synthesis. This is the first major physiological concept of Anatomy & Physiology which is introduced in the first few chapters of General Biology. Now that the students are is no longer required to take General Biology the student is arriving to the Anatomy & Physiology I course with no base knowledge of this physiological processes from which to build. This lack of basic scientific knowledge could contribute to the overall pass rate being below the projected goal.

**Analysis of Results for Spring 2020** – This essay was administered prior to the shift to ERT (Emergency Remote Teaching) due to the COVID-10 pandemic. The essay was administered on paper with Exam 1. The full scheduled period was used to complete the exam and the essay. Several students did not attempt the essay, submitting a blank sheet of paper. The Online courses set a time limit and reported that some students appeared to run out of time, stopping in mid-sentence. Other online faculty reported that students copied and pasted material from other sources to answer the essay.

**CLO 1** (Body Organization)

Assessment Method: Essay – Integumentary system/burns.

**Analysis of Results for Fall 2019** – The results of the essays over Burns for both the traditional and online course achieved the pass rate goal. This has goal have been met in past semesters. It is speculated that student arrive to AP 1 with some background knowledge of burns and the severity. A consistent detail was missed on the rubric. Many students would skip how burns are classified and begin the essay with what they knew which was the degree of burns. Overall, the pass rate met the overall 70% goal

**Analysis of Results for Spring 2020** – This essay was administered around the time the campus shifted to ERT (Emergency Remote Teaching) due to the COVID-10 pandemic. Some sections had administered the essay with the exam during the regular scheduled period. Others administered the essay through Blackboard. Some set a time limit which varied from 10 to 30 minutes by instructor. Others administered it as an assignment. Several students in the face-to-face courses and the online courses did not attempt the essay. This essay was scheduled for

retirement due to the successful pass rate from the fall and previous semesters. With the shift of education world-side to ERT it is suspected that this impacted student's performance and resulted the overall pass rate being below the set goal.

**CLO 1** (Body Organization) and **CLO 2** (Musculoskeletal system)

Assessment Method: Essay – Calcium Ion Homeostasis

**Analysis of Results for Fall 2019** – N/A Essay was implemented in spring 2020 as a potential replacement to the essay on the integumentary system covering burns.

**Analysis of Results for Spring 2020** – This essay was administered around the time the campus shifted to ERT (Emergency Remote Teaching) due to the COVID-10 pandemic. Some sections had administered the essay with the exam during the regular scheduled period. Others administered the essay through Blackboard. Some set a time limit which varied from 10 to 30 minutes by instructor. Others administered it as an assignment. Several students in the face-to-face courses and the online courses did not attempt the essay. With the shift of education world-side to ERT it is suspected that this impacted students' performance and resulted the overall pass rate being below the set goal.

**CLO 2** (Musculoskeletal system)

Assessment Method: Essay – Muscle contraction.

**Analysis of Results for Fall 2019** – Neither the traditional nor the online courses performed well in this assessment. The online did have a lower pass rate, but fewer students were assessed. Students lack an understanding of muscle contraction. As with the results of the protein synthesis essay this is the first major physiological concept of Anatomy & Physiology. Now that the student is no longer required to take General Biology the student is arriving to Anatomy & Physiology I course with no base knowledge of physiological processes from which to build. This lack of basic scientific knowledge could contribute to the overall pass rate being below the projected goal.

**Analysis of Results for Spring 2020** – This essay was administered after the shifted to ERT (Emergency Remote Teaching) due to the COVID-10 pandemic. Essay in all sections was administered online through Blackboard. Some set a time limit which varied from 10 to 30 minutes by instructor. Others administered it as an assignment. Faculty reported that several students in did not submit an essay. Faculty also reported that some students copied and pasted material from other sources to answer the essay. Some faculty utilized SafeAssign (automated report generated showing percentage of possible plagiarism). The shift to ERT did not

seem to have a significant impact on the overall pass rate. It was still below the set goal but with the similar percentages.

**CLO 3** (Nervous system)

Assessment Method: Essay – Autonomic Nervous System sympathetic/parasympathetic)

**Analysis of Results for Fall 2019** – This essay is a relay of facts more than concepts, so the past rate goal was achieved. Again, this is a concept that students have a base knowledge at least from High School of the "fight-flight" response so there is an elementary foundation from which to build knowledge.

**Analysis of Results for Spring 2020** – This essay was administered after the shifted to ERT (Emergency Remote Teaching) due to the COVID-10 pandemic. Essay in all sections was administered online through Blackboard. Some set a time limit which varied from 10 to 30 minutes by instructor. Others administered it as an assignment. Faculty reported that several students in did not submit an essay. Some faculty utilized SafeAssign (automated report generated showing percentage of possible plagiarism). The shift to ERT and being the toward the end of a challenging semester appeared to significantly impact the overall pass rate. The pass rate goal was met in fall 2019 but fell abruptly in the spring 2020.

## 9. What is the action plan for the next academic year? (2020-2021) Explain.

**CLO 1** (Body organization)

**Action Plan for Spring 2020** – Essay (protein synthesis) was 25 points and due to the poor performance, this impacted the overall grade. Essay will be reduced to being worth 15 points for the spring 2020 semester. Will administer same essay in the spring 2020 semester

**Action Plan for Fall 2020 –** Due to the continued changing responses to the COVID-19 pandemic it is unknown as to how education curriculum will be delivered this fall; therefore, no changes are going to be implemented. The same essay (protein synthesis) will be administered for fall 2020 in whatever format is available at the time the essay is scheduled to be administered.

A**ction Plan for Spring 2021 –** Will be determined based on the analysis of the fall 2020 assessment. Consider increasing points for essay to encourage participation.

**CLO 1** (Body Organization)

**Action Plan for Spring 2020** – Continue same essay (Integumentary system/burns) for spring 2020. If success rates continue to meet set goals the consider retiring essay after Spring 2020.

**Action Plan for Fall 2020 –** Retiring essay after Spring 2020. Will be replaced with the calcium homeostasis essay.

**Action Plan for Spring 2021 –** None.

**CLO 1** (Body Organization) and **CLO 2** (Musculoskeletal system)

**Action Plan for Spring 2020** – Begin using new essay (calcium ion homeostasis) for spring 2020. This essay will replace the integumentary system essay on the burns. It was determined that emphasis needed to be on pre-requisite topics and concepts pertinent for Anatomy & Physiology II and Microbiology. Homeostasis was the selected topic.

**Action Plan for Fall 2020 –** Due to the continued changing responses to the COVID-19 pandemic it is unknown as to how education curriculum will be delivered this fall; therefore, no changes are going to be implemented. The same essay (calcium homeostasis) will be administered for fall 2020 in whatever format is available at the time the essay is scheduled to be administered.

**Action Plan for Spring 2021 –** Will be determined based on the analysis of the fall 2020 assessment. Consider increasing points for essay to encourage participation.

**CLO 2** (Musculoskeletal system)

**Action Plan for Spring 2020** – Essay (muscle contraction) was 25 points and due to the poor performance, this impacted the overall grade. Essay will be reduced to being worth 15 points for the spring 2020 semester. Will administer same essay in the spring 2020 semester

**Action Plan for Fall 2020 –** Due to the continued changing responses to the COVID-19 pandemic it is unknown as to how education curriculum will be delivered this fall; therefore, no changes are going to be implemented. The same essay (protein synthesis) will be administered for fall 2020 in whatever format is available at the time the essay is scheduled to be administered.

**Action Plan for Spring 2021 –** Will be determined based on the analysis of the fall 2020 assessment. Consider increasing points for essay to encourage participation.

**CLO 3** (Nervous system)

**Action Plan for Spring 2020** – Essay (ANS-sympathetic/parasympathetic) was 25 points and due to the poor performance, this impacted the overall grade. Essay will be reduced to being worth 15 points for the spring 2020 semester. Will administer same essay in the spring 2020 semester

**Action Plan for Fall 2020 –** Due to the continued changing responses to the COVID-19 pandemic it is unknown as to how education curriculum will be delivered this fall; therefore, no changes are going to be implemented. The same essay (ANS) will be administered for fall 2020 in whatever format is available at the time the essay is scheduled to be administered.

**Action Plan for Spring 2021 –** Will be determined based on the analysis of the fall 2020 assessment. Consider increasing points for essay to encourage participation.

**CLO 1** (Body organization), **CLO 2** (Musculoskeletal system), & **CLO 3** (Nervous system)

**Action Plan for Spring 2021 –** It was determined that emphasis needed to be placed on pre-requisite topics and concepts pertinent for Anatomy & Physiology II and Microbiology. Along with the new essay for homeostasis we will begin to develop a standardized post-test to evaluate pre-requisite concepts for Anatomy & Physiology II and Microbiology.

**Report Prepared by Course Lead Instructor:** Darrellyn Williams, DC 08-01-2020