

Human Anatomy and Physiology and OER

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Project Goals

Decrease the cost of instructional material for students and ensure students will have access to instructional material to help them be prepared and successful thus improving the rate of student retention to the College and University

Collaborate with faculty in the STEM unit at Potomac State College and with peers at other similar institutions on best practices used replacing textbooks with low-cost or no-cost alternatives

Identify and/or create OER materials to be made available to other users, colleagues and peers.

Assess and evaluate the integration and/or creation of OER utilizing assignments, embedded questions and student feedback.

Utilize the course Learning Outcomes to assess the effectiveness of the use of Open Educational Resources and their impact on student retention in the two-course sequence.

Course Learning Outcomes

Use appropriate terminology to effectively communicate information related to anatomy and physiology.

Identify the anatomical structures and explain the physiological functions of body systems.

Explain the principle of homeostasis and the use of feedback loops to control physiological systems in the human body.

Use anatomical knowledge to predict physiological consequences and use knowledge of function to predict the features of anatomical structures.

Explain the interrelationships within and between anatomical and physiological systems of the human body.

Synthesize ideas to make a connection between knowledge of anatomy and physiology and real-world situations, including healthy lifestyle decisions and homeostatic imbalances.

A Sample of OER Researched

OpenStax Anatomy and Physiology (<https://openstax.org/details/books/anatomy-and-physiology>)

Biodigital Human/Human Studio (<https://human.biodigital.com/>) and **PhysiologyModels.Info** (<http://www.physiologymodels.info/>)

Anatomy Zone <http://anatomyzone.com/>

Body Smart <https://www.getbodysmart.com/>

Results of What Has Been Put Into Practice

A mix of the online textbook and OER materials have been implemented. This has successfully reduced the cost of the course materials for the student since they do not need to purchase a laboratory textbook which would cost \$150.00 for the two semester course. Often not all of the lab book was used so the students were paying for content they did not utilize. The chart below demonstrates this success by analyzing three embedded questions for the lab practical that compares classes that have utilized a lab book versus classes that have purchased a lab kit for a fully online lab versus students who have utilized OER.

Semester	Number of Students Assessed	Question 1 % Mastery	Question 2 % Mastery	Question 3 % Mastery	OER Used	Lab Kit Purchased for Online Lab	Traditional Lab Book Used
Fall 2020	17	92	85	93	Yes	No	No
Spring 2021	42	84	91	97	Yes	No	No
Summer 2020	15	74	83	72	No	Yes	No
Summer 2019	10	79	79	77	No	Yes	No
Spring 2019	43	88	91	89	No	No	Yes
Spring 2020	45	90	84	96	No	No	Yes

Question 1 Mastery: Traditional Lab Book > OER > Lab Kit

Question 2 Mastery: OER > Traditional Lab Book > Lab Kit

Question 3 Mastery: OER > Traditional Lab Book > Lab Kit