Goals

G 1: anatomical structure
students will be able to identify anatomical structures of the various levels of hierarchical organization in the human body

G 2: principles of chemistry
students will recognize the application of the principles of chemistry in human physiology

G 3: physiological function
students will understand the function of various organelles, cells, tissues, organs, and organ systems in the human body

G 4: form and function
students will understand the relationship between anatomical form and physiological function

G 5: critical thinking
students will use critical thinking skills to solve physiological problems

G 6: teamwork and communication
students will work as a team and will analyze, interpret, and communicate scientific results in laboratory

Student Learning Outcomes/Objectives, with Any Associations and Related Measures, Targets, Findings, and Action Plans

SLO 1: anatomical structure
students will be able to identify anatomical structures of the various levels of hierarchical organization in the human body

Relevant Associations:
Standard Associations
New Core Component Areas
2. Life & Physical Science (L & PS)
New Core Objectives
3. Empirical & Quantitative Skills (EQS)

Related Measures
M 1: anatomical structure
Students will answer five questions embedded in multiple-choice exams. Questions will be similar to the following:

What type of neuroglial cell produces a myelin sheath around the axons of some neurons in the central nervous system?

a. microglial cell
b. astrocyte
c. oligodendrocyte (correct)
d. ependymal cell

Source of Evidence: Standardized test of subject matter knowledge
Target:
Students will average at least 65% correct on the five embedded multiple-choice questions. This percentage is based on previous assessment activities in Biol 2401.

SLO 2: principles of chemistry
students will recognize the application of the principles of chemistry in human physiology

Relevant Associations:
Standard Associations
New Core Component Areas
2. Life & Physical Science (L & PS)
New Core Objectives
3. Empirical & Quantitative Skills (EQS)

General Education/Core Curriculum Associations
2. Quantitative Thinking: Students will demonstrate mastery of quantitative reasoning and algorithms used to address applied problems

Related Measures
M 2: principles of chemistry
Students will answer five questions embedded in multiple-choice exams. Questions will be similar to the following:

What is the main function of the chemical substance adenosine triphosphate (ATP)?

a. to act as a buffer
b. to store chemical energy (correct)
c. to catalyze chemical reactions
d. to act as a solvent

Source of Evidence: Standardized test of subject matter knowledge

Target:
Students will average at least 65% correct on the five embedded multiple-choice questions. This percentage is based on previous assessment activities in Biol 2401.

SLO 3: physiological function
students will understand the function of various organelles, cells, tissues, organs, and organ systems in the human body

Relevant Associations:

Standard Associations

New Core Component Areas
2. Life & Physical Science (L & PS)

New Core Objectives
3. Empirical & Quantitative Skills (EQS)

General Education/Core Curriculum Associations
2. Quantitative Thinking: Students will demonstrate mastery of quantitative reasoning and algorithms used to address applied problems

Related Measures

M 3: physiological function
Students will answer five questions embedded in multiple-choice exams. Questions will be similar to the following:

What organelle is responsible for protein synthesis?

a. endoplasmic reticulum
b. Golgi complex
c. mitochondrion
d. ribosome (correct)

Source of Evidence: Standardized test of subject matter knowledge

Target:
Students will average at least 65% correct on the five embedded multiple-choice questions. This percentage is based on previous assessment activities in Biol 2401.

SLO 4: form and function
students will understand the relationship between anatomical form and physiological function

Relevant Associations:

Standard Associations

New Core Component Areas
2. Life & Physical Science (L & PS)

New Core Objectives
3. Empirical & Quantitative Skills (EQS)

General Education/Core Curriculum Associations
2. Quantitative Thinking: Students will demonstrate mastery of quantitative reasoning and algorithms used to address applied problems

Related Measures

M 4: form and function
Students will answer five questions embedded in multiple-choice exams. Questions will be similar to the following:

Within a myofibril of a muscle fiber, contractile proteins are arranged in units called _____.

a. sarcomeres (correct)
b. sarcoplasmic reticula
c. fascicles
d. transverse tubules

Source of Evidence: Standardized test of subject matter knowledge

Target:
Students will average at least 65% correct on the five embedded multiple-choice questions. This percentage is based on previous assessment activities in Biol 2401.

SLO 5: critical thinking
students will use critical thinking skills to solve physiological problems

Relevant Associations:

Standard Associations

New Core Component Areas
2. Life & Physical Science (L & PS)

New Core Objectives
1. Critical Thinking (CT)

General Education/Core Curriculum Associations
1. Critical Thinking: Students will apply critical thinking appropriately to identify, analyze and resolve complex issues.

Related Measures
M 5: critical thinking
Students will answer five questions embedded in multiple-choice exams. Questions will require critical thinking to solve physiological problems and will be similar to the following:

Some drugs used in chemotherapy to fight cancer slow or stop the process of cell division. Which of the following organelles do these drugs most likely target?

a. mitochondrion  
b. centrosome (correct)  
c. Golgi complex  
d. ribosome

Source of Evidence: Performance (recital, exhibit, science project)

Target: Students will average at least 65% correct on the five embedded multiple-choice questions. This percentage is based on previous assessment activities in Biol 2401.

SLO 6: teamwork and communication
students will work as a team and will analyze, interpret, and communicate scientific results in laboratory

Relevant Associations:

Standard Associations

New Core Component Areas
2. Life & Physical Science (L & PS)
New Core Objectives
2. Communication (COM)
4. Teamwork (TW)

General Education/Core Curriculum Associations
3. Communication: Students will develop written and oral presentations that are clear, precise, organized, efficient and appropriately adapted to audience and purpose.
4. Teamwork: includes the ability to collaborate effectively, consider different points of view, and work with others to support a shared purpose or goals.

Related Measures

M 6: teamwork and communication
Students will work in groups to complete a model of DNA replication. They will work cooperatively to both complete the model and to help all group members fully understand the material. Each group will be asked to explain the process used to complete the exercise when they are done. The following evaluation tool will be used to assess teamwork and communication (ability to work cooperatively and to communicate results).

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<td>Were students able to cooperate to complete the assignment?</td>
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<td>Were the students able to adequately explain the process they were completing?</td>
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<td>Were students able to learn cooperatively in a group?</td>
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<td>Were students able to stay on task?</td>
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The following rubric will be used by the instructor to complete the above chart:

Were students able to cooperate to complete assignment?
1- Students were unable to complete the assignment.
2- Students completed the assignment, but with many errors and a lot of assistance.
3- Students completed the assignment with few errors and little assistance.
4- Students completed the assignment correctly.

Were students able to adequately explain the process used to complete the assignment?
1- Students were unable to explain the process.
2- Students were somewhat able to explain the process, but needed a significant amount of prompting from the instructor.
3- Students were able to explain the process, but needed some prompting from the instructor.
4- Students were able to explain the process correctly with no prompting.

Were students able to learn cooperatively in a group?
1- Students were unable to learn cooperatively, and finished class with little comprehension of the material.
2- Students were somewhat able to learn cooperatively, but only one of the group members seemed to understand the material.

3- Students were able to learn cooperatively, and all group members seemed to understand the material.

4- Students were able to learn cooperatively, and all group members had a firm understanding of the material.

Were students able to stay on task?
1- The students were unable to stay on task.
2- Students stayed on task somewhat, but were often distracted and not working on the assignment.
3- Students stayed on task, but did occasionally get distracted.
4- Students stayed on task, and completed the assignment without distraction.

Source of Evidence: Performance (recital, exhibit, science project)

Target:
Student groups will score an average of 3 on the evaluation rubric. This represents adequate work.