Course Syllabus

BIOL 2404 - Introductory Anatomy and Physiology

Catalog Description: Study of the structure and function of human anatomy, including the neuroendocrine, integumentary, musculoskeletal, digestive, urinary, reproductive, respiratory, and circulatory systems. Content may be either integrated or specialized.

Prerequisites: None

Semester Credit Hours: 4
Lecture Hours per Week: 3
Lab Hours per Week: 3
Extended hours: Additional study is required outside posted class times.
Contact Hours per Semester: 96

State Approval Code: 26.0707.51.03

Class section meeting time:

Alternate Operations During Campus Closure: In the event of an emergency or announced campus closure due to a natural disaster or pandemic, it may be necessary for Panola College to move to altered operations. During this time, Panola College may opt to continue delivery of instruction through methods that include, but are not limited to: online learning management system (CANVAS), online conferencing, email messaging, and/or an alternate schedule. It is the responsibility of the student to monitor Panola College's website (www.panola.edu) for instructions about continuing courses remotely, CANVAS for each class for course-specific communication, and Panola College email for important general information.

Core Components and Related College Student Learning Outcomes
This course counts as part of the academic requirements of the Panola College Core Curriculum and an Associate of Arts or Associate of Science degree. ☒ Yes ☐No: If no, skip to Instructional Goals.

The items below marked with an X reflect the state-mandated outcomes for this course **IF this is a CORE course**:

☒ Critical Thinking Skills – to include creative thinking, innovation, inquiry and analysis, evaluation and syntheses of information

- ☐ CT1: Generate and communicate ideas by combining, changing, or reapplying existing information
- ☒ CT2: Gather and assess information relevant to a question
- ☒ CT3: Analyze, evaluate, and synthesize information

☒ Communication Skills – to include effective development, interpretation, and expression of ideas through written, oral, and visual communication

- ☒ CS1: Develop, interpret, and express ideas through written communication
- ☒ CS2: Develop, interpret, and express ideas through oral communication

☒ CS3: Develop, interpret, and express ideas through visual communication

☒ Empirical and Quantitative Skills – to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions

☐ EQS1: Manipulate and analyze numerical data and arrive at an informed conclusion

☒ EQS2: Manipulate and analyze observable facts and arrive at an informed conclusion

☒ Teamwork – to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal

☒ TW1: Integrate different viewpoints as a member of a team

☒ TW2: Work with others to support and accomplish a shared goal

☐ Personal Responsibility – to include the ability to connect choices, actions, and consequences to ethical decision-making

☐ PR1: Evaluate choices and actions and relate consequences to decision-making

☐ Social Responsibility – to include intercultural competence, knowledge of civic responsibility, and the ability to engage effectively in regional, national, and global communities

☐ SR1: Demonstrate intercultural competence

☐ SR2: Identify civic responsibility

☐ SR3: Engage in regional, national, and global communities

Instructional Goals and Purposes:
Introductory Anatomy and Physiology is a one semester foundation course that surveys human anatomy and physiology. This course is geared toward students who are pursuing career in the allied health fields or who wish to increase their success rate in BIOL 2401 and BIOL 2402. This course does not substitute for Biology 2401 or 2402 unless specified by your program director. The purpose of this course is to provide the student with an in-depth study of the anatomy and physiology (structure and function) of the human body. In so doing, the student will be educated in the core components/college student learning outcomes (listed above) and the course learning outcomes (listed below).

Learning Outcomes: ***[from the ACGM catalog]***
After studying all materials and resources presented in the course, the student will be able to:

1. Demonstrate an understanding of the anatomical structure and physiological function of the body's organ systems.
2. Demonstrate an understanding of the interrelationships of body's organ systems.

Course Content:
A general description of lecture/discussion topics included in this course are listed in the Learning Outcomes section of this syllabus.

Students in all sections of this course will learn the following content:

Lecture

1. The basic concepts concerning anatomy and physiology.
2. The inter-relationship of chemistry with anatomy and physiology.
3. The structural components of the cell and their genetic regulation.
4. The importance of enzymes, energy and metabolism to cell function.
5. The importance of membrane transport and membrane potentials to cell functions.

6. The classification, structure and function of tissues.
7. The structure, function and clinical considerations of the integumentary system.
8. The structure, function and clinical considerations of bone tissue including bone development.
9. The bones and structures comprising the axial and appendicular skeletons.
10. The structure, function and clinical importance of articulations.
11. The structure, function, and clinical considerations of muscles and muscle tissue.
12. The major muscles of the human body.
13. The functional organization of the nervous system.
14. The characteristics, components and functions of the central nervous system.
15. The characteristics, components and functions of the peripheral nervous system.
16. The characteristics, components and functions of the autonomic nervous system.
17. The structure, function and clinical considerations of sensory organs.
18. The structure, function and clinical considerations of the endocrine system.
19. The structure, function and clinical considerations of the blood.
20. The structure, function and clinical considerations of the cardiovascular system.
21. The physiological aspects of cardiac output and blood flow.
22. The structure, function and clinical considerations of the lymphatic system.
23. The structure, function and clinical considerations of the respiratory system.
24. The structure, function and clinical considerations of the urinary system.
25. The structure, function and clinical considerations of the digestive system.
26. The metabolism of macromolecules and energy regulation within the body.
27. The structure, function and clinical considerations of the reproductive systems.
28. The structure, function and clinical considerations of developmental anatomy and inheritance.

Lab

1. The basic concepts concerning anatomy and physiology.
2. The inter-relationship of chemistry with anatomy and physiology.
3. The structural components of the cell and their genetic regulation.
4. The importance of enzymes, energy and metabolism to cell function.
5. The importance of membrane transport and membrane potentials to cell functions.
6. The classification, structure and function of tissues.
7. The structure, function and clinical considerations of the integumentary system.
8. The structure, function and clinical considerations of bone and describe bone development.
9. The bones and structures comprising the axial and appendicular skeletons.
10. The structure, function and clinical importance of articulations.
11. The structure, function, and clinical considerations associated with muscles.
12. The major muscle of the body.
13. The characteristics, components and functions of the central nervous system.
14. The characteristics, components and functions of the peripheral nervous system.
15. The structure, function and clinical considerations of sensory organs.
16. The structure, function and clinical considerations of the endocrine system.
17. The structure, function and clinical considerations of the formed elements of the blood.
18. The structure, function and clinical considerations of the heart.
19. The physiological aspects of cardiac output and blood flow.
20. The structure, function and clinical considerations of the respiratory system.
21. The structure, function and clinical considerations of the urinary system.
22. The structure, function and clinical considerations of the digestive system.
23. The structure, function and clinical considerations of the reproductive system.
24. The structure, function and clinical considerations of developmental anatomy and inheritance.

Methods of Instruction/Course Format/Delivery:

This course is offered in a variety of formats: face-to-face, hybrid, and online. The course typically includes lecture, class discussion, reading assignments, laboratory performance, and web-based assignments including web-based tutorials.

Major Assignments / Assessments:
The following items will be assigned and assessed during the semester and used to calculate the student's final grade.

Lecture

1. In-Class Quizzes: Several in-class quizzes will be administered during the semester. Any lecture session may begin or end with a quiz. Quiz questions will be drawn from lecture notes, reading assignments, text objectives and review questions. Each quiz may consist of multiple-choice, true/false, matching, and fill-in-the-blank questions.
2. Mastering A&P Quizzes: There will be several publisher-administered Mastering A&P quizzes which are accessed via Canvas. The quizzes are untimed quizzes which are opened and closed at a date and time set by the professor. Each quiz may consist of multiple-choice, true/false, matching, fill-in-the-blank, and short-answer questions.
3. Exams: Several major exams will be administered during the semester. Exam questions will be drawn from lecture notes, reading assignments, text objectives and review sheet. Each exam may consist of multiple-choice, true/false, matching, and fill-in-the-blank questions.
4. Final Exam: A final comprehensive examination will be given the week of final exams and will cover material from the entire semester. The final comprehensive exam may consist of multiple- choice, true/false and matching questions.

Lab

1. Lab Quizzes: Several in-class lab quizzes will be administered during the semester. Any laboratory session may begin or end with a quiz. Questions are normally drawn from information covering one to a few exercises in the lab manual. Each quiz may consist of multiple-choice, true- false, matching, and fill-in-the-blank questions.
2. Lab Exercises: Laboratory exercises may include drawings, laboratory reports or any other methodologies deemed important by the professor. The oral presentation of a selected disease is included with lab exercises.
3. Lab Practicals: Several lab practicals will be administered during the semester. Each lab practical will cover material studied in lab for a specific set of lab exercises. Each lab practical will consist of fill in the blank questions.

Course Grade:
The grading scale for this course is as follows:

- A – 90-100%
- B – 80-90%
- C – 70-80%
- D – 60-70%
- F - <60%

Lecture (70% of Course Grade)

- In-Class Quizzes – 10% of lecture average
- Mastering A&P Quizzes - 10% of lecture average
- Exams - 60% of lecture average
- Final Exam - 20% of lecture average

- A student can have the final exam can replace the lowest lecture exam grade by participating in lecture activities, and not exceeding the college's attendance policy.

Lab (30% of Course Grade)

- Lab Quizzes – 20% of lab average
- Lab Exercises – 40% of lab average
- Lab Practicals – 40% of lab average
    - A student can earn up to 2 points on their final lab average by active and studious participating in lab activities and not exceeding the college's attendance policy.

Texts, Materials, and Supplies:

Required

- Marieb and Keller. 2018. Modified Mastering A&P with Pearson eText – Student Access Code Card – Essentials of Human Anatomy & Physiology, 12th ed. Pearson Education.
- In-House Lab Manual – Accessed on Canvas
- Caduceus Access code (for online lab only).

Optional

- Krieger. 2013. A Visual Analogy Guide to Human Physiology & Physiology 3rd ed. Morton Publishing, Englewood, CO.
- Perez. 2008. Anatomy (Flash Cards). Bar Charts Publishing, Boca Raton, FL.

Required Readings:

- Marieb and Keller. 2018. Modified Mastering A&P with Pearson eText – Student Access Code Card – Essentials of Human Anatomy & Physiology, 12th ed. Pearson Education.
- In-House Lab Manual – Accessed on Canvas
- Caduceus Access code (for online lab only).

Recommended Readings:

- Krieger. 2013. A Visual Analogy Guide to Human Physiology & Physiology 3rd ed. Morton Publishing, Englewood, CO.
- Perez. 2008. Anatomy (Flash Cards). Bar Charts Publishing, Boca Raton, FL.

Other:

- Courses conducted via video conferencing may be recorded and shared for instructional purposes by the instructor.
- For current texts and materials, use the following link to access bookstore listings: https://www.panolacollegestore.com
- For testing services, use the following link: https://www.panola.edu/elearning/testing.html
- If any student in this class has special classroom or testing needs because of a physical learning or emotional condition, please contact the ADA Student Coordinator in Support Services located in the Charles C. Matthews Student Center or go to https://www.panola.edu/student-success/disability-support-services/ for more information.
- Withdrawing from a course is the student's responsibility. Students who do not attend class and who do not withdraw will receive the grade earned for the course.
- Student Handbook, *The Pathfinder:* https://www.panola.edu/student-success/documents/pathfinder.pdf