



## 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.

**Prerequisites:** None

**Semester Credit Hours:** 4

**Lecture Hours per Week:** 3

**Lab Hours per Week:** 3

**Extended hours:** 1--Additional study is required outside posted class times.

**Contact Hours per Semester:** 112

**State Approval Code:** 26.0707.51.03

**Class section meeting time:** day/time or online (NEW)

#### **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:**

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:** (text in paragraphs)

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.

#### **Assessment(s):**

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 and matching questions.
2. Mastering A&P Quizzes: There will be several publisher-based quizzes which are accessed via Canvas. These quizzes are untimed and are available for a block of days as determined by the instructor. 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, and matching 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.

#### Lecture

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, and matching questions.
2. Lab Exercises: Written 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.
4. A&P Concepts: AP Concepts is a separate section of the course and a student must register for concepts separate from the lecture and lab sections. Although a separate section, A&P Concepts counts towards a student's lab grade. To earn credit, the student must be both present and participating in A&P Concept activities.

#### Course Grade:

The grading scale for this course is as follows:

90-100 = A  
 80-89 = B  
 70-79 = C  
 60-69 = D  
 <60 = F

#### 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 – 15% of lab average
- Lab Exercises – 35% of lab average
- Lab Practicals – 40% of lab average

- A&P Concepts – 10% of lab average
- A student can earn 1 point on their lab average for attendance, and not exceeding the college's attendance policy.
- A student can earn 1 point on their lab average for participating in lab activities.

**Texts, Materials, and Supplies:**

Required

- Marieb. 2018. Essentials of Human Anatomy & Physiology 12<sup>th</sup> ed. Pearson Education, Boston, MA.
- Modified Mastering A&P access code for lecture book.
- In-House Lab Manual – Provided by lab instructor
- Lab Kit (for online lab only). Purchased only through the Panola Store.

Optional

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

**Required Readings:**

- Marieb. 2018. Essentials of Human Anatomy & Physiology 12<sup>th</sup> ed. Pearson Education, Boston, MA.
- In-House Lab Manual – Provided by lab instructor

**Recommended Readings:**

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- Perez. 2008. Anatomy (Flash Cards). Bar Charts Publishing, Boca Raton, FL.

**Other:**

- For current texts and materials, use the following link to access bookstore listings: <http://www.panolacollegestore.com>
- For testing services, use the following link: <http://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 <http://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*: <http://www.panola.edu/student-success/documents/pathfinder.pdf>