

BIO 238 (A&P1) Syllabus & Policy

Course Description: Four semester hours, three hours lecture, three hours lab per week. Structure and function of the skeletal, muscular, and nervous systems. Not open to students who have received credit for BIO 327. Not open for credit for biology majors or minors. Required lab fee.

General Education Core Curriculum Objectives/Outcomes:

CO 1: Critical Thinking: to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information

CO 2: Communication Skills: to include effective development, interpretation and expression of ideas through written, oral and visual communication

CO 3: Empirical and Quantitative Skills: to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions

CO 4: Teamwork: to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal

Program Learning Outcomes:

This is a general education core curriculum course and no specific program learning outcomes for this major are addressed in this course.

Student Learning Outcomes:

SLO 1: Students will describe the structure, function, and location of the major components of integumentary, skeletal, muscular, and nervous body systems. (COs 1-4)

SLO 2: Students will explain how various body systems interact in order to maintain homeostasis. (COs 1, 2)

SLO 3: Students will use correct anatomical and physiological terminology. (CO 2)

SLO 4: Students will demonstrate proper use and care of a compound light microscope. (CO 3)

SLO 5: Students will collect qualitative and quantitative data, analyze results, and draw conclusions. (COs 1, 3)

Course Requirements:

Students must enroll in both lecture and lab and final grades will reflect both components. The lecture portion of the grade is based on student performance on examinations. Lab includes daily quizzes, participation (evaluated during each lab activity and recitation), and practical examinations. Students will submit a video of a one-minute oral presentation of an assigned bone including the description of its function, location, and markings. Students will complete a team assignment in which they will be required to follow an experimental procedure, gather and analyze data, and prepare a lab report.

Grading Policy:

Overall anatomy and physiology grades will weigh lecture as 65% and lab as 35%. The final A&P grade will be calculated using the following formula: **(A&P lecture grade x 0.65) + (A&P lab grade x 0.35) = final A&P grade**

The following will be used to calculate the lecture grade: the average of 5 unit exams. Each test is worth 100 points.

The following will be used to calculate the lab grade: four practical exams (20% each), participation (5%), online/in lab quiz average (15%). Note: Failing lab will result in an **F** for the entire A&P course.

Final grades will be assigned according to the following scale:

A: 100% - 90%

B: 89% - 80%

C: 79% - 70%

D: 69% - 60%

F: < 59%

Attendance Policy:

(1) You will not be permitted to take the test if you arrive late on a test day.

(2) Attendance will be taken at the beginning of lab and recitation. (3) If you arrive after roll has been taken or leave early you will be counted late. (4) An **unexcused** absence will result in a three point deduction in your participation grade. (5) An **excused absence** or **arriving late** will result in a 1 point deduction to your participation grade for each offence.

Academic Integrity (A-9.1):

Academic integrity is a responsibility of all university faculty and students. Faculty members promote academic integrity in multiple ways including instruction on the components of academic honesty, as well as abiding by university policy on penalties for cheating and plagiarism.

Education

Faculty members are responsible for providing information about academic integrity and education for maintaining academic honesty during their regular coursework. Course syllabi provide information about penalties and the appeal process.

Definition of Academic Dishonesty

Academic dishonesty includes both cheating and plagiarism. Cheating includes but is not limited to (1) using or attempting to use unauthorized materials to aid in achieving a better grade on a component of a class; (2) the falsification or invention of any information, including citations, on an assigned exercise; and/or (3) helping or attempting to help another in an act of cheating or plagiarism. Plagiarism is presenting the words or ideas of another person as if

they were your own. Examples of plagiarism are (1) submitting an assignment as if it were one's own work when, in fact, it is at least partly the work of another; (2) submitting a work that has been purchased or otherwise obtained from an Internet source or another source; and (3) incorporating the words or ideas of an author into one's paper without giving the author due credit.

Please read the complete policy at http://www.sfasu.edu/policies/academic_integrity.asp

Withheld Grades Semester Grades Policy (A-54):

Ordinarily, at the discretion of the instructor or record and with the approval of the academic chair/director, a grade of WH will be assigned only if the student cannot complete the course work because of unavoidable circumstances. Students must complete the work within one calendar year from the end of the semester in which they receive a WH, or the grade automatically becomes an F. If the students register for the same course in future terms the WH will automatically become an F and will be counted as a repeated course for the purpose of computing the grade point average.

The circumstances precipitating the request must have occurred after the last day in which a student could withdraw from a course. Students requesting a WH must be passing the course with a minimum projected grade of C.

Students with Disabilities: To obtain disability related accommodations, alternate formats, and/or auxiliary aids, students with disabilities must contact the Office of Disability Services (ODS), Human Services Building, room 325, telephone (936)468-3004, (936)468-1004 as early as possible in the semester. Once verified, ODS will notify the course instructor and outline the accommodations and/or auxiliary aids to be provided. Failure to request services in a timely manner may delay your accommodations.

Course Outline:

Week	Lecture Content	Lab Content	CO #	Activities
1	Anatomy vs. Physiology Levels of Organization Homeostasis Atoms, Ions, Molecules	Orientation of the Human Body	1 2 2	- Identify and interpret body regions and organs of the body (lab) - Instruction in using proper vocabulary when identifying structures of the body (lab) - Short essay demonstrating student's comprehension and ability to apply the idea of homeostatic mechanism (lecture)
2	Water and Organic Compounds	The Microscope Cell Structure	2 3 2	- Instruction in proper microscope techniques to make observations of cellular division (lab) - Short essay demonstrating student's comprehension and ability to apply the idea of organic compounds (lecture)
3	Energy, Chemical reactions, Enzymes, and Respiration	Histology	1, 3 1, 3 2	- Compare/Contrast tissue subtypes using the proper microscope techniques - Instruction in analysis of texts, data, and diagrams leading to the drawing of the scientifically sound conclusion, followed by practice exercises (lecture) - Short essay demonstrating student's comprehension and ability to apply the nature of enzymes (lecture)
4	Cell Structure Membrane Transport	Practical #1	2	- Guided writing demonstrating student's ability to distinguish between various types of membrane transport (lecture)
5	Membrane Transport Nucleus and Protein Synthesis	Skeletal System	2 2 2, 4 2	- Identify the bones of the axial skeleton and bone markings associated with each bone (lab) - Oral communication instruction in preparation to a 1 minute speech on an assigned bone in the body explaining the components of the bone, as well as the structure and function (lab) - "Pair/share" activity on DNA structure and function (lecture) - Guided writing demonstrating student's comprehension of the protein synthesis, ability to apply this information, and compare/contrast the major components (lecture)
6	Cell Cycle	Skeletal System and Articulations	2 1, 2, 3, 4 1 2	- Identify the bones of the appendicular skeleton and bone markings associated with each bone (lab) - Instruction in the processes of critical thinking (reading and discussion) + data collection and processing + teamwork : Work in teams to gather data and interpret results in the assignment "Bag of bones" (lab) - Explain the body movement based on the bone shape (lab) - Visual representation of mitosis ("finger animation") (lecture)
7	Integumentary System	Practical #2		
8	Skeletal System	Muscular System	2 1, 2	- Identify the muscles of the body (lab) - Short essay comparing and contrasting bone vs. cartilage (lecture)
9	Muscular System	Muscular System	2 2, 4	- Identify the muscles of the body (lab) - "Pair/share" timed activity on the physiology of skeletal muscle contraction (lecture)
10	Muscular System	Practical #3	2, 4	- "Pair/share" timed activity on the physiology of smooth muscle contraction (lecture)
11	Nervous Tissue	Nervous System	2, 4	- Teamwork instruction : Work with a partner to dissect the brain and identify various structures (lab)
12	Nervous Tissue	Nervous System	1, 2	- Identify/Interpret areas of the spinal cord and spinal nerves (lab) - Microscope observation of the spinal cord and nervous tissue (lab)
13	Brain	Special Senses	2 1, 3, 4	- Identify structures within the special sense organs with the naked eye and using proper microscope techniques (lab) - Teamwork instruction : Work with a partner to complete a variety of clinic tests, interpret and compare results (lab)
14	Spinal cord. Somatic and autonomic nervous systems	Practical #4	1, 2	- Short essay comparing and contrasting somatic vs. autonomic nervous system (lecture)

Examples of Core Objective Activities

Core Objective 1 – Critical Thinking

Instruction: Students will be provided with a critical reading on the scientific method and hypothesis testing that will relay instructions on evaluating hypotheses based on collected data. Students will be provided with a reading describing proper compare/contrast techniques. In addition, students will be instructed on the approaches how to analyze various scenarios (involving scientific texts, tables, diagrams) through a number of instructor-directed discussions during lecture and lab.

Targeted processes/assignments:

- Identify/Interpret – Human Anatomy and Physiology requires students to be able to correctly identify structures of the body and interpret those features in terms of function. Students practice identifying various structures of the body including molecules, cellular components, cells, tissues, organs, and organ systems.
- Compare/Contrast – Students will use proper compare/contrast techniques to compare/contrast various molecules, cellular components, cells, tissues, organs, and organ systems.
- Application - Students will be provided with the variety of lecture and lab assignments that will require the application of their knowledge and will promote the development of critical thinking skills: analysis of various real-life scenarios in order to provide scientific explanation of the events or make a scientifically sound prediction of the possible outcomes.

Core Objective 2 – Communication

Instruction: Students will be provided with examples of proper video presentations, short essays, lab reports accompanied by instructor-directed discussions describing the importance of using the correct scientific vocabulary and format, correct spelling, accurate graphic representation in describing the anatomical structures and physiological processes of human body, maintaining scientific tone, and incorporating visual tools (diagrams, tables, and graphs).

Targeted processes/ assignments:

- Oral and Visual Communication - Students will prepare a one-minute video recording presenting the body location, structure, and function of an assigned bone. The presentation will include proper scientific vocabulary and will target students learning the components of the skeletal system.
- Written Communication – In lecture, students will be complete a number of short essays demonstrating student's comprehension of various physiological processes, their ability to compare/contrast and apply obtained information. In lab, students will provide written interpretations of the obtained data, and draw sound scientific conclusions.

Core Objective 3 – Empirical and Quantitative Skills

Instruction: One of the major objectives of Anatomy and Physiology is to be able to identify and describe various structures in a human body. In order to be able to identify *microscopic* structures, students will be instructed on proper microscopy techniques. Students will be participating in an instructor-led discussion on the proper data collection, data organization, processing, and presentation resulting in informed conclusions and inferences.

Targeted processes/ assignments:

- Microscopic Observation – Students will use proper microscopic techniques in order to collect observations about cells undergoing different phases of cell cycle, variations in the organization of different tissue types, tissue arrangement in various organs.
- Data Analysis – Students will collect qualitative/quantitative data and organize them into data tables. In the case of the bone lab they will be required to make calculations, graph the data, and interpret the results. During the special senses lab students will collect personal data, and determine whether their parameters are normal or atypical. Students will also be presented with data (in the text, table, and graph form) during lecture allowing them to improve upon data analysis, recognition of patterns, conclusion drawing skills, and ability to predict possible outcomes.

Core Objective 4 – Teamwork

Instruction: An instructor-led discussion will emphasize the strategies of effective teamwork, like determining roles at the beginning of the project, accountability, setting goals, time management, attitude, and conflict resolution.

Targeted processes/assignments: Students will have numerous opportunities to improve their teamwork skills because many A&P lab assignments are set up as small group exercises promoting the ability to consider different points of view and to work effectively with others in order to achieve common goals. In lecture, students will perform “pair/share” activity on the structure of DNA, physiology of skeletal and smooth muscle contraction.

In addition, students will work in formally assigned teams to complete organ dissections (a sheep brain and a sheep eye) and special senses clinical tests. Each individual student will be asked to evaluate their teamwork experience.