

**Life and Physical Sciences
Student Learning Outcome Alignment Form**

Course Prefix/Number: HSP 2401

Course Title: Human Anatomy and Physiology I

Brief Course Description:

This course, which provides a comprehensive study of the anatomy and physiology of the human body with an emphasis on health and medical issues, is designed for students preparing for careers in the health professions. It will include an overview of organ systems, basic chemical organization, cell structure and function, and tissues; followed by the study of the skeletal, muscular, and nervous systems.

Foundational Component Area: Life and Physical Sciences. Courses in this category focus on describing, explaining, and predicting natural phenomena using the scientific method. Courses involve the understanding of interactions among natural phenomena and the implications of scientific principles on the physical world and on human experiences.

* Choose at least one Core SLO from the Core Objective.

Core Objective	ASU SLO	Course SLO	Assignment	Assessment Method
Critical Thinking*	CT1: Gather, analyze, evaluate, and synthesize information relevant to a question or issue.	Students will collect and analyze anatomical and physiological information to evaluate clinical scenarios.	Students will be assigned a critical thinking checklist with activities and case studies conducted in and out of lecture.	Embedded Lecture Exams and Quiz Questions will be used to assess this SLO.
	CT2: Develop and demonstrate a logical position (i.e. perspective, thesis, hypothesis) that acknowledges ambiguities or contraindications.			
Communication*	CS1: Develop, interpret, and express ideas through effective written communication.	Students will develop understanding of the physical relationships of anatomical structures to one another (at all levels of organization) and communicate the acquired knowledge in written form.	Students will conduct lab investigations in which physical relationships of anatomical structures and physiology are emphasized. Students will communicate their findings in writing to the instructor.	Embedded Lab Practical questions, lab reports, or rubric-evaluated components of activities pertinent to writing will be used to assess this SLO.
	CS2: Develop, interpret, and express			

	ideas through effective oral communication.			
	CS3: Develop, interpret, and express ideas through effective visual communication.			
Empirical & Quantitative Skills	EQS1: Manipulate and analyze numerical data and arrive at an informed conclusion.	Students will collect numerical anatomical and physiological information via relevant clinical scenarios and analyze and evaluate those data in order to reach an informed conclusion.	Students will perform lab investigations in which numerical data on anatomical structures are collected, classified, and analyzed in order to reach an informed conclusion about relevant clinical scenarios.	Embedded lab practical questions, lab reports, or rubric-evaluated components of the lab investigations focusing on analysis of anatomical and physiological data will be used to assess this SLO.
	EQS2: Manipulate and analyze observable facts and arrive at an informed conclusion.	Students will make anatomical observations and collect relevant factual information and analyze and evaluate those facts in order to reach an informed conclusion.	Students will conduct lab investigations in order to observe and collect anatomical facts and perform analyses in order to reach informed conclusions about relevant clinical scenarios.	Embedded lab practical questions, lab reports, or rubric-evaluated components of the lab investigation focusing on the collection of anatomical and physiological data will be used to assess this SLO.
Teamwork*	TW1: Consider different viewpoints as a member of a team.			
	TW2: Work effectively with others to support and accomplish a shared goal.	Students will work effectively with others to support and accomplish a shared goal (e.g. engage team members, support a constructive team climate, and focus on the tasks assigned)	Hands on lab activities will be conducted in which students work in groups to complete assigned tasks.	The activity average, peer evaluations or rubric-evaluated components of the activities will be used to assess this SLO.

* Choose at least one SLO (more than one can be chosen).

HSP 2401 Human Anatomy and Physiology I

Instructor:

Office:

Phone:

E-Mail:

Office Hours:

COURSE DESCRIPTION: This course, which provides a comprehensive study of the anatomy and physiology of the human body with an emphasis on health and medical issues, is designed for students preparing for careers in the health professions. It will include an overview of organ systems, basic chemical organization, cell structure and function, and tissues; followed by the study of the skeletal, muscular, and nervous systems.

COURSE OBJECTIVES: Upon successful completion of this course, students will be able to demonstrate:

- Chapter 1:
 - Define anatomy and physiology.
 - Name the components that make up the organization levels of the body.
 - Describe the major essentials of life.
 - Define homeostasis and describe its importance to survival.
 - Describe the major body cavities.
 - List the systems of the body and give the organs in each system.
 - Describe directions and planes of the body.
 - Discuss the membranes near the heart, lungs, and abdominal cavity.
 - List the nine abdominal regions.
 - Compare positive and negative feedback mechanisms.

- Chapter 2:
 - Describe the relationships between atoms and molecules.
 - Explain chemical bonds.
 - Describe how an atomic number is determined.
 - List the major groups of inorganic chemicals common in cells.
 - Explain acids, bases, and buffers.
 - Define the characteristics of lipids and proteins.
 - Define pH.
 - Describe the functions of various types of organic chemicals in cells.
 - List four examples of steroid molecules.
 - Explain nucleic acids.

- Chapter 3:
 - Explain the parts of a cell's structure.
 - Describe the structure and function of cytoplasm and cytosol.
 - Describe the parts of the cell nucleus and their functions.
 - Describe the "powerhouses" of the cell.

- Describe the processes that transport substances across the plasma membrane.
 - Compare the define cilia and flagella.
 - Compare passive and active cell mechanisms.
 - Describe the parts of the cell cycle.
 - Explain cell division and cancer.
- Chapter 4:
 - Define metabolism, catabolism, and anabolism.
 - Describe what takes place in an oxidation-reduction reaction.
 - Explain cellular respiration.
 - Compare and contrast glycogenesis, gluconeogenesis, and lipolysis.
 - Discuss hydrolysis of a water molecule.
 - Describe glycolysis in the cellular respiration.
 - Describe oxidation of glycerol and fatty acids.
 - Explain the oxidation of amino acids.
 - Discuss metabolic pathways. Define oxidation and energy.
- Chapter 5:
 - Describe the four major types of tissues.
 - Discuss the types and functions of epithelial tissue.
 - Identify endocrine and exocrine glands
 - Explain the characteristics of mast cells, macrophages, and adipocytes.
 - Describe the three types of connective tissue fibers.
 - Explain fluid connective tissues.
 - Describe the various types of cartilage.
 - Describe how bone tissue establishes the framework of the body.
 - Describe the three types of muscle tissue and their characteristics.
 - Discuss the basic structure and role of neural tissue.
- Chapter 6:
 - Explain the structure of the dermis and epidermis.
 - Describe the normal and pathological colors skin can have.
 - List the functions of the skin.
 - Describe the structure of nails.
 - Discuss the various kinds of glands in the skin and the secretions of each.
 - Explain how the sweat glands play a major role in regulating body temperature.
 - Describe the three most common forms of skin cancer.
 - Describe the location and function of sebaceous and ceruminous glands.
 - Explain the anatomic parts of a hair.
 - Describe the effects of aging on the integumentary system.
- Chapter 7:
 - Discuss the major functions of bones.
 - Discuss bone classifications and give examples of each.
 - Distinguish between the axial and appendicular skeletons.
 - Identify the major features of the bones that compose the thoracic cage and the upper limbs.
 - Distinguish the major parts of a long bone.

- List the substances normally stored in bone tissue.
 - Name each of the bones of the cranium.
 - Explain how the structures of cervical, thoracic, and lumbar vertebrae differ.
 - Name each of the bones of the lower limbs.
 - List the bones of the ankle and identify the largest of these.
- Chapter 8:
 - Define joints (articulations).
 - Classify joints by structure and function.
 - Describe the structures of synovial joints.
 - Name six types of synovial joints.
 - Name and describe common body movements.
 - Name the most common joint injuries.
 - Compare and contrast the common types of arthritis.
 - List the ligaments that accompany the knee joints.
 - Compare gliding and angular movements.
 - Describe the causes and complications of Lyme disease.
- Chapter 9:
 - Describe the structure of a skeletal muscle.
 - Compare the contraction mechanisms of skeletal muscle and cardiac fibers.
 - Describe a motor end plate and the function of a neurotransmitter.
 - Explain the relationship between cellular respiration and heat production.
 - Describe two major types of smooth muscle.
 - Distinguish between the origin and insertion of a skeletal muscle.
 - List the muscles that provide facial expressions and head movements.
 - Name the muscles of the abdominal wall and explain the action of the rectus abdominis.
 - Explain the muscles that flex and extend the thigh.
 - Describe the quadriceps femoris group and the function of the muscles it contains.
- Chapter 10:
 - Describe the anatomical and functional divisions of the nervous system.
 - List the basic functions of the nervous system.
 - Describe the functions of astrocytes and oligodendrocytes.
 - Describe the neuron and its important structural components.
 - Describe the locations and functions of neuroglia.
 - Describe synapses and synaptic transmission.
 - Discuss the events that occur at a chemical synapse.
 - List the major types of neurotransmitters.
 - Define action potential.
 - Explain the classifications of nerve fibers.
- Chapter 11:
 - Name the primary regions of the brain in adults.
 - Describe the locations of the ventricles of the brain.
 - Describe the gyri, sulci, and fissures of the brain.

- Explain the part of the brain that is connected to pituitary gland.
 - Describe the functions of the hypothalamus and thalamus.
 - Describe the centers that control blood pressure and respiration.
 - Specify the functions of the cerebellum.
 - Explain the layers of the meninges.
 - Discuss the main structures and functions of the spinal cord.
 - Describe the effects of the aging process on the brain.
- Chapter 12:
 - List the types of somatic and visceral sensory receptors.
 - Explain the three levels of the somatosensory system.
 - Name the 12 cranial nerves.
 - Explain reflex activity and spinal reflexes.
 - Explain dual innervation of the autonomic nervous system.
 - Describe the arrangement of sympathetic and parasympathetic neurons and ganglia.
 - Describe the relationship between preganglionic and postganglionic neurons.
 - Distinguish between the sympathetic and parasympathetic divisions of the autonomic nervous system.
 - Differentiate between cholinergic and adrenergic neurons as to the neurotransmitter secreted and the type of neuron that secretes the neurotransmitter.
 - Contrast the two types of cholinergic receptors.

TEXTBOOK

- Moini J. Anatomy and Physiology for Health Professionals. 2nd Edition. Jones and Bartlett. ISBN: 978-1-284-03694-7
- BodyViz Software Program.

STUDENT RESPONSIBILITY AND ATTENDANCE

It is the student's responsibility to be on time for class, participate in class discussions, and be actively engaged in the learning process. Instructions and assignments will often be given during class, therefore it is in your best interest to attend. If you have to miss class due to an unforeseen event/accident or illness, please contact the instructor prior to the start of class. Pending the reason for your absence, the instructor may inform you of any missed homework assigned during class. Not acceptable reasons for absences include but are not limited to: over sleeping, work, wanting to leave early or come back late from the weekend, and celebrating a friend, relative or pet's birthday. If you are sick, let the instructor know and bring a physician's note when you come back to class.

LATE WORK OR MISSED ASSIGNMENTS POLICY Late work will not be accepted unless you have received permission from the instructor prior to the due date. If you miss an assignment due to an unexcused absence, you are out of luck. Show up for class!

ACADEMIC HONESTY Academic honesty is expected on all work. Students are expected to maintain complete honesty and integrity in their online experiences. Any student found guilty of any form of dishonesty in academic work is subject of disciplinary action and possible expulsion from ASU. The Department of Health Science Professions adheres to the academic honesty

statement as set forth in the Angelo State University Student Handbook (2011-2012) <http://www.angelo.edu/content/files/17358-university-honor-code>. The University "faculty expects all students to engage in all academic pursuits in a manner that is above reproach and to maintain complete honesty and integrity in the academic experience both in and out of the classroom setting and may initiate disciplinary proceedings against a student accused of any form of academic dishonesty, including but not limited to, cheating on an examination or other academic work, plagiarism, collusion, and the abuse of resource materials."

PLAGIARISM

Plagiarism at ASU is a serious topic. The Angelo State University's Honor Code gives specific details on plagiarism and what it encompasses. Plagiarism is the action or practice of taking someone else's work, idea, etc., and passing it off as one's own. Plagiarism is literary theft.

In your discussions and/or your papers, it is unacceptable to copy word for word without quotation marks and the source of the quotation. We use the *APA Style Manual of the American Psychological Association* as a guide for all writing assignments. Quotes should be used sparingly. It is expected that you will summarize or paraphrase ideas giving appropriate credit to the source both in the body of your paper and the reference list. Papers are subject to be evaluated for originality via Bb Turnitin. Resources to help you understand this policy better are available at the ASU Writing Center

http://www.angelo.edu/dept/writing_center/academic_honesty.php.

STUDENTS WITH DISABILITIES

1. "Angelo State University is committed to the principle that no qualified individual with a disability shall, on the basis of disability, be excluded from participation in or be denied the benefits of the services, programs, or activities of the university, or be subjected to discrimination by the university, as provided by the Americans with Disabilities Act of 1990 (ADA), the Americans with Disabilities Act Amendments Act of 2008 (ADAAA), and subsequent legislation."

2. The Office of Student Affairs is the designated campus department charged with the responsibility of reviewing and authorizing requests for reasonable accommodations based on a disability, and it is the student's responsibility to initiate such a request by contacting the Office of Student Affairs, University Center, Room 112 at (325) 942-2047 or (325) 942-2211 (TDD/FAX) or by e-mail at studentservices@angelo.edu to begin the process. The Office of Student Affairs will establish the particular documentation requirements necessary for the various types of disabilities. Reasonable accommodations will be made for students determined to be disabled or who have documented disabilities.

INCOMPLETE GRADE POLICY (OP 10.11 Grading Procedures)

It is policy that incomplete grades be reserved for student illness or personal misfortune. Please contact faculty if you have serious illness or a personal misfortune that would keep you from completing course work. Documentation may be required.

STUDENT ABSENCE FOR OBSERVANCE OF RELIGIOUS HOLY DAYS

"A student who intends to observe a religious holy day should make that intention known in writing to the instructor prior to the absence." Please see ASU Operating Policy [10.19](#).

COPYRIGHT POLICY

Students officially enrolled in this course should make only one printed copy of the given articles and/or chapters. You are expressly prohibited from distributing or reproducing any portion of course readings in printed or electronic form without written permission from the copyright holders or publishers.

SYLLABUS CHANGES

The faculty member reserves the option to make changes as necessary to this syllabus and the course content. If changes become necessary during this course, the faculty will notify students of such changes by email, course announcements and/or via a discussion board announcement. It is the student's responsibility to look for such communications about the course on a daily basis.

TENTATIVE SCHEDULE

Date	Topic	Chapter
Week 1	Introduction to Human Anatomy and Physiology	1
Week 2	Chemical Basics of Life	2
Week 3	Cells	3
Week 4	Cellular Metabolism	4
Week 5	Tissues	5
Week 6	The Integumentary System	6
Week 7	Bone Tissues and the Skeletal System	7
Week 8	Bone Tissues and the Skeletal System	7
Week 9	Articulations	8
Week 10	The Muscular System	9
Week 11	The Muscular System	9
Week 12	Neural Tissue	10
Week 13	Central Nervous System	11
Week 14	Central Nervous System/Peripheral Nervous System	11 / 12
Week 15	Peripheral Nervous System	12
Finals Week		

The Archer College of Health and Human Services Curriculum Committee voted unanimously to approve the recommendation of the HSP department to offer A&P1 and A&P2. We believe offering an integrated, systems approach will greatly benefit a number of groups including HSP majors, Kinesiology students, and pre-nursing students. The primary technology that will be utilized in these courses is *Body Viz*, which allows students to visualize often abstract A&P concepts utilizing 3-D “stacked” images from actual CT and MRI scans. BodyViz allows students a unique sense of discovery while they investigate real patient data, making their learning experience more meaningful.