

BIOL 2301
Anatomy & Physiology I
Online Lecture Syllabus



Credit: 3 semester credit hours (3 hours lecture)

Prerequisite/Co-requisite: Lab course (BIOL 2101) must be taken at the same time. Can be taken face to face or fully online.

Course Description

This class is web based and fully online. Anatomy and Physiology I is the first part of a two course sequence. It is a study of the Structure and Function of the human body including cells, tissues and organs of the following systems: integumentary, skeletal, muscular, nervous and special senses. Emphasis is on interrelationships among systems and regulation of physiological functions involved in maintaining homeostasis. ***This course is time-bound, structured, and completed totally online.***

TEXTBOOK AND MATERIALS:

REQUIRED = Textbook - OpexStax Anatomy & Physiology Levels I and II -
<https://openstax.org/details/books/anatomy-and-physiology?Book%20details>

Your textbook for this class is available for free online. If you prefer, you can also get a print version at a very low cost. Your book is available in web view and PDF for free. You can also choose to purchase on iBooks or get a print version via the campus bookstore or from OpenStax on Amazon.com.

You can use whichever formats you want. Web view is recommended -- the responsive design works seamlessly on any device. If you buy on Amazon, make sure you use the link on your book page on openstax.org so you get the official OpenStax print version. (Simple printouts sold by third parties on Amazon are not verifiable and not as high-quality.)

Anatomy and Physiology from OpenStax, Print ISBN 1938168135, Digital ISBN 1947172042, www.openstax.org/details/anatomy-and-physiology

Supplemental = Textbook - WikiBooks – Human Physiology
https://en.wikibooks.org/wiki/Human_Physiology

Course Objectives

Upon successful completion of this course, students will:

1. Use anatomical terminology to identify and describe locations of major organs of each system covered.

Revised April 9, 2021

2. Explain interrelationships among molecular, cellular, tissue, and organ functions in each system.
3. Describe the interdependency and interactions of the systems.
4. Explain contributions of organs and systems to the maintenance of homeostasis.
5. Identify causes and effects of homeostatic imbalances.
6. Describe modern technology and tools used to study anatomy and physiology

Course Outline

1. Human Body Intro Regional and Descriptive Terms
 - a. Homeostasis that describe the human body
 - b. Problem-solving scenario
 - c. Correct anatomical position
7. Body system and examples Practice and diagramming layers
Dermis and its components
Hypodermis
 - b. Planes of the Body Demonstration of planes using paper
Interpretation of x-ray, CT scans and MRI images
2. Cells
 - a. Structures Organelles within an animal cell
Features of the plasma membrane Cytoskeleton components
3. Functions
 - a. Physiology of the organelles
 - b. Physiology of the plasma membrane
 - c. Physiology of the cytoskeleton components
4. Mitosis
 - a. Stages
 - b. Special terminology
 - c. Cancer – mitosis gone wrong
5. Tissues
 - a. Main types of epithelial tissue
3 basic types
Characteristics of each
 - b. Other tissues of the body
Pseudostratified
Stratified tissues
6. Integumentary System
 - a. Skin
Layers of the epidermis and specialized cells within those Appendages
 - b. Hair
 - c. Nails
7. Bones and Skeletal System
 - a. Basic Shapes of Bones
How to classify bones
Practice activity
 - b. Bone Markings
18 different bone markings
Practice activity
 - c. Location on skeleton
8. The Skeleton
 - a. Bones of the axial skeleton
Skull
 - b. Ribs and vertebrae
Pelvis
 - c. Bones of the appendicular skeleton

- Arms, wrists and hands
 - Legs, ankles and feet
 - d.* Joints
 - e.* Synovial joints
 - Characteristics
 - Synovial fluid
 - f.* Other joints
 - Hinge
 - Pivotal
 - Saddle
 - Ball-n-socket, etc.
 - g.* Movements of Joints
 - Class demonstration
 - Practice activity
 - 9. Muscles and Muscle Tissue
 - a.* Introduction Physics
 - behind muscle
 - movement
 - 3 basic types of muscle
 - b.* Characteristics of Muscle
 - Tissue striations of skeletal
 - muscle specialized
 - branching of cardiac muscle
 - c.* Related muscle terms
 - 10. Muscular System
 - a.* Major muscles (anterior)
 - b.* Major muscles (posterior)
 - 11. Fundamentals of the Nervous System
 - a.* Neurons
- Anatomy of the neuron
 - Physiology of the neuron
 - b.* Neuroglia and supporting cells of the nervous
 - Einstein's brain versus most humans; latest research findings 6 types of neuroglia and their locations and characteristics
 - c.* Central Nervous System
 - Structures of the Brain

 - All the parts of the brain, their locations
 - Distinguishing characteristics
 - Functions
 - Physiology Hormones related to certain structures
 - d.* Peripheral Nervous System
 - Structures
 - Cranial nerves
 - Thoracic nerves
 - Lumbar nerves
 - Functions
 - Physiology
 - Reaction times/reflex

Grade Scale

- 90 – 100 = A
- 80 – 89 = B
- 70 – 79 = C
- 60 – 69 = D
- 0 – 59 = F

Course Evaluation

1. Mandatory Course Syllabus Quiz	5%
2. Discussion Participation	10%
3. Video Quizzes	10%
4. Chapter Quizzes (5)	20%
5. Exams Ch 1 – 8 (Midterm) Ch 9 – 16 (Final Exam)	30%
6. Mandatory Group Project	20%
7. <u>Individual Project</u>	5%
	100%

Course Requirements

1. Student will participate in discussion boards for each of the chapters.
2. Complete exams on the due dates. No late exams or assignments will be accepted.
3. Student will complete a reading and writing assignment to be submitted online on due date. No late papers accepted.
4. Student will complete a current event with PowerPoint presentation (see video for instructions). No late current events accepted.
5. 3 quizzes total; with a quiz on Chap 1 Orientation to Body, Chap 6 Bones and Chap 9 Muscles. To be completed on the due dates. No late quizzes accepted.

Course Policies

1. You must log into Blackboard and access this course a minimum of **3 times per week**.
2. Cheating of any type will not be tolerated.
3. **Late assignments will not be accepted.** Students will receive a zero for assignments not completed.
4. If you wish to drop this course, you must drop it administratively. If you do not drop you will receive an F for the course.
5. Internet usage- students are to use proper netiquette when participating in course email, assignment submissions and online discussions.
<http://www.albion.com/netiquette/corerules.html>

Technical Requirements

The latest technical requirements, including hardware, compatible browsers, operating systems, software, JAVA, etc. can be found online at:

https://help.blackboard.com/enus/Learn/9.1_2014_04/Student/015_Browser_Support/015_Browser_Support_Policy A functional broadband internet connection, such as DSL, cable, or WiFi is necessary to maximize the use of the online technology and resources.

Disabilities Statement

The Americans with Disabilities Act of 1992 and Section 504 of the Rehabilitation Act of 1973 are federal anti-discrimination statutes that provide comprehensive civil rights for persons with disabilities. Among other things, these statutes require that all students with documented disabilities be guaranteed a learning environment that provides for reasonable accommodations for their disabilities. If you believe you have a disability requiring an accommodation, please contact the Special Populations Coordinator at (409) 880-1737 or visit the office in Student Services, Cecil Beeson Building. visit the online resource:

<http://www.lit.edu/depts/stuserv/special/defaults.aspx>

Student Code of Conduct Statement

It is the responsibility of all registered Lamar Institute of Technology students to access, read, understand and abide by all published policies, regulations, and procedures listed in the *LIT Catalog and Student Handbook*. The *LIT Catalog and Student Handbook* may be accessed at www.lit.edu or obtained in print upon request at the Student Services Office.

Starfish

LIT utilizes an early alert system called Starfish. Throughout the semester, you may receive emails from Starfish regarding your course grades, attendance, or academic performance. Faculty members record student attendance, raise flags and kudos to express concern or give praise, and you can make an appointment with faculty and staff all through the Starfish home page. You can also login to Blackboard or MyLIT and click on the Starfish link to view academic alerts and detailed information. It is the responsibility of the student to pay attention to these emails and information in Starfish and consider taking the recommended actions. Starfish is used to help you be a successful student at LIT.