BIOL 2301
Lecture Syllabus
Anatomy & Physiology I

Credit: 3 semester credit hours (3 hours lecture)

Prerequisite/Co-requisite: Lab course (BIOL 2101) must be taken at the same time.

Course Description
This class is web enhanced utilizing Blackboard Platform. 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.

TEXTBOOK AND MATERIALS:
REQUIRED = Textbook - OpexStax Anatomy & Physiology Levels I and II -

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.)


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.
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

Core Objectives

1. Critical Thinking Skills: To include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information
2. Communication Skills: To include effective development, interpretation and expression of ideas through written, oral, and visual communication
3. Empirical & Quantitative Skills: To include the manipulation and analysis of numerical data or observable facts resulting in informed conclusion
4. Teamwork: To include the ability to connect choices, actions, and consequences to ethical decision-making
5. Personal Responsibility: To include ability to connect choices, actions and consequences to ethical decision-making

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
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
Psuedostratified
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 vertabrae
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
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 10%
2. Video Quizzes 10%
3. Chapter Quizzes (5) 20%
4. Exams Ch 1 – 8 (Midterm) Ch 9 – 16 (Final Exam) 30%
5. Mandatory Group Project 20%
6. Individual Project 10%

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](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](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](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](http://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.