



## **Anatomy & Physiology I (BIOL 2301 Online)**

**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. Complete the Online Orientation and answer yes to 7+ questions on the Online Learner Self-Assessment:

<http://www.lit.edu/depts/DistanceEd/OnlineOrientation/OOStep2.aspx>

### **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.*

### **Required Textbook and Materials**

1. Anatomy & Physiology by E. Marieb (Pearson Publishing), 4<sup>th</sup> edition.  
ISBN: 978-0-321-61640-1 or 5<sup>th</sup> edition.
2. Internet access as well as access to MS PowerPoint and MS Word
3. Complete an orientation online: netiquette core rules assignment.

### **Recommended Workbook**

BIOL 2301 The Anatomy Assignment, The new 2<sup>nd</sup> edition is ISBN: 978-1-4652-5101-5  
Author S. Lanoue.

### **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

### **Course Outline**

1. Human Body Intro
  - a. Homeostasis
    - Correct anatomical position
    - Practice and diagramming
  - b. Planes of the Body
    - Demonstration of planes using paper
2. Body system and examples
  - a. Regional and Descriptive Terms that describe the human body

- Interpretation of x-ray, CT scans and
- MRI images
- 3. Cells**
  - a.* Structures
    - Organelles within an animal cell
    - Features of the plasma membrane
    - Cytoskeleton components
- 4. Functions**
  - a.* Physiology of the organelles
  - b.* Physiology of the plasma membrane
  - c.* Physiology of the cytoskeleton components
- 5. Mitosis**
  - a.* Stages
  - b.* Special terminology
  - c.* Cancer – mitosis gone wrong
- 6. Tissues**
  - a.* Main types of epithelial tissue
    - 3 basic types
    - Characteristics of each
  - b.* Other tissues of the body
    - Pseudostratified
    - Stratified tissues
- 7. Integumentary System**
  - a.* Skin
    - Layers of the epidermis and specialized cells within those layers
    - Dermis and its components
    - Hypodermis
- 8. Appendages**
  - a.* Hair
  - b.* Nails
- 9. 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
- 10. The Skeleton**
  - a.* Bones of the axial skeleton
    - Skull
    - Ribs and vertebrae
    - Pelvis
  - b.* Bones of the appendicular skeleton
    - Arms, wrists and hands
    - Legs, ankles and feet
  - c.* Joints
  - d.* Synovial joints
    - Characteristics
    - Synovial fluid
  - e.* Other joints
    - Hinge
    - Pivotal
    - Saddle
    - Ball-n-socket, etc.
  - f.* Movements of Joints
    - Class demonstration
    - Practice activity
- 11. 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
- 12. Muscular System**
  - a.* Major muscles (anterior)
  - b.* Major muscles (posterior)
- 13. Fundamentals of the Nervous System**
  - a.* Neuronos
    - 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

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| <p>c. Central Nervous System</p> <ul style="list-style-type: none"> <li>– Structures of the Brain</li> <li>– All the parts of the brain, their locations</li> <li>– Distinguishing characteristics</li> <li>– Functions</li> <li>– Physiology</li> <li>– Hormones related to certain structures</li> </ul> | <p>d. Peripheral Nervous System</p> <ul style="list-style-type: none"> <li>– Structures</li> <li>– Cranial nerves</li> <li>– Thoracic nerves</li> <li>– Lumbar nerves</li> <li>– Functions</li> <li>– Physiology</li> <li>– Reaction times/reflex</li> </ul> |
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### Grading Scale

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

### Required Course work

Midterm (Chapters 1,3,4,5,6-7)	200 points	20%
Final Exam (Comprehensive)	250 points	25%
MRSA paper	100 points	10%
<b>*Current Event Report</b>	100 points	10%
3 quizzes (50 points each)	150 points	15%
<u>Discussion Board Participation</u>	<u>200 points</u>	<u>20%</u>
<b>Total</b>	<b>1000 points</b>	<b>100%</b>

### \*Current Event Report (Common Assignment)

### Course Evaluation

### 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 over MRSA 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/en-us/Learn/9.1\\_2014\\_04/Student/015\\_Browser\\_Support/015\\_Browser\\_Support\\_Policy](https://help.blackboard.com/en-us/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](http://www.lit.edu) or obtained in print upon request at the Student Services Office.