

## *Anatomy & Physiology I LABORATORY*

**Instructor: Rob Mayer**

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**LAB TIME:** Mon, Tue, Wed 11:30 – 1:30

**Lab Manual:** *Anatomy and Physiology Laboratory Text, Intermediate Version, The Cat*, 9th Edition; Marieb, Elaine; Benjamin Cummings, 2008.

### **Laboratory Rules**

The following rules apply to all Anatomy & Physiology students while using the lab. Please read the following rules carefully. Keep this list in your laboratory notebook.

1. Note the locations of the following safety devices: exits, shower, fire extinguisher, fire blanket, eye wash, gas switch, first aid kit, and burn station.
2. Be sure to place all books, coats, and articles other than your lab book and textbook under your lab bench. Please make sure that all the isles are free from any obstructions.
3. There is to be **NO FOOD OR DRINK IN THE ROOM** during lab time, this includes **GUM!!!!!!**
4. Long hair, loose/baggy/belled sleeves or baggy shirts that may catch on fire must be pulled back, or not be worn. **In addition no open-toed shoes or sandals are allowed in lab.**
5. Young children and pets of any sort are not allowed in the laboratory. If you plan to bring an older child to class, you must have permission of the lab instructor.

6. Lab aprons, glove, and goggles will be provided. These items must be worn when your instructor tells you to do so.
  
7. Always wash work areas with disinfectant at the beginning and end of the lab.
  
8. Always wash hands with soap at the beginning and end of lab.
  
9. DO NOT THROW any regular trash into the biohazard waste bags. Trash bins are located at the front of the lab for any trash that is not contaminated; such as paper towels form hand washing, scrap paper, tissues, candy and gum wrappers. PLEASE DO NOT THROW trash into sinks or drawers.
  
10. NEVER throw broken glass into the biohazard bag or the trash bins. Report any broken glass to the instructor who will take care of it. This includes glass slides and cover slips.

Please be sure that all glass wear and materials used during lab are put back where you got them and IN THE CONDITION IN WHICH YOU RECEIVED THEM!

**Laboratory Competencies:**

1. the use of the chief anatomical terms for human body positions, directions, sections, cavities, and regions.
  
2. to develop skill in examining and interpreting histological preparations of human body tissues.
  
3. how to maintain a safe and productive lab station and be proficient in recording results.
  
4. the various kinds of human epithelia and associate certain functional characteristics with what they see in histological preparations.
  
5. the various kinds of human connective tissue proper and relate what they see in these preparations to their functions.
  
6. the various skin levels and integumentary organs in histological preparations and relate what they see to their functions.
  
7. the various kinds of bone and cartilage tissue and relate what they see to their function.

8. the bones of the body and name some of their markings.
9. the signs of growth in supportive connective tissue histological preparations.
10. the various types of bone articulations and understand their workings.
11. the features of skeletal muscle tissue in specimens viewed under the microscope.
12. how muscles act by recruitment and that muscles differ in their resistance to fatigue, and explain.
13. how synaptic areas such as the site of afferent transmissions and neuromuscular junctions work or may be blocked.
14. the parts of the neuron including their cell body parts and fibers.
15. the components of nerves and ganglia.
16. the distinction between myelinated and unmyelinated fibers and appreciate the effect of nodes of Ranvier.
17. the coverings of the human and sheep brains , the larger and smaller structures of these brains , and the connectors to the cranial nerves.
18. the functions of the parts of the human eye.
19. the functions of the parts of the human ear and vestibular apparatus.
20. the main regions of a cross section of the spinal cord including the spinal nerve connection and its osseous passageway and the appearance of the spinal cord at various levels of the spinal column.

**GRADING:**

**Your laboratory grade includes, lab reports ( 40%) from your lab book, lab quizzes (30%), attendance, working in groups, dependence upon others, preparation, technique, cleanliness, organization, and efficiency (30%) are all part of your laboratory grade. Lab reports are due one week after the lab has been completed unless otherwise noted by your instructor. Reports should remain in your lab manual and will be credited at the start of each lab. The assigned work must be complete and well thought in order to receive full credit.**

## SCHEDULE

### 1. Lab 1: Monday July 29

#### Exercise 1: The Language of Anatomy

- Complete the following activities for Exercise 1:  
Activity 1: Locating Body Regions  
Activity 2: Using Correct Anatomical Terminology  
Activity 4: Identifying Organs in the Abdominopelvic Cavity  
Activity 5: Locating Abdominal Surface Regions
- Complete the following exercises for each section::

Exercise	1			
Pages	11	12	13	14
Numbers	1, 2, 3, 4	6, 7	9, 10	11, 12, 14, 18

### Lab 2: Tues June 30

#### Exercise 4: The Cell

- Complete the following activities for Exercise 4:  
Activity 1: Identifying Parts of the Cell  
Activity 2: Identifying Components of a Plasma Membrane  
Activity 3: Locating Organelles  
Activity 6: Identifying the Mitotic Stages
- Complete the following exercises:

Exercise	4			
Pages	49	50	51	52
Numbers	1, 2, 3	4	8, 9	11, 12, 13

### Lab 3: Wed July 1

#### Exercise 6A: Classification of Tissue

- Complete the following activities for Exercise 6A:  
Activity 1: Examining Epithelial Tissue  
Activity 2: Examining Connective Tissue  
Activity 3: Examining Nervous Tissue

#### Activity 4: Examining Muscle Tissue

- Complete the following exercises:

Exercise	6A			
Pages	85	86	87	88
Numbers	1, 2, 3	10	11, 12, 13, 14	16, 17, 18

#### Exercise 7: The Integumentary System (if time allows)

- Complete the following activities for Exercise 7:  
Activity 1: Locating Structures on Skin Model  
Activity 2: Identifying Nail Structures  
Activity 5: Plotting the Distribution of Sweat Glands
- Complete the following exercises:

Exercise	7		
Pages	101	103	104
Numbers	1, 2, 3	6, 7, 8, 9	10, 12, 13, 14

#### **Lab 4: Monday July 6 Quiz #1 Labs 1-3**

#### Exercise 9: Overview of the Skeleton

- Complete the following activities for Exercise 9:  
Activity 1: Examining a Long Bone  
Activity 3: Examining the Microscopic Structure of Compact Bone  
Activity 4: Examination of the Osteogenic Epiphyseal Plate & Different Types of Cartilage
- Complete the following exercises:

Exercise	9			
Pages	119	120	121	122
Numbers	1	3, 4	6, 7, 9	14, 15

#### Exercise 10: The Axial Skeleton

- Complete the following activities for Exercise 10:  
Activity 1: Identifying the Bones of the Skull

- Complete the following exercises:

Exercise	10	
Pages	139	141
Numbers	1	3 – 9

**Lab 5: Tuesday July 7**

Exercise 10 Continued

- Complete the following activities for Exercise 10:  
Activity 4: Examining Vertebral Structure  
Activity 5: Examining The Relationship Between Ribs and Vertebrae
- Complete the following exercises:

Exercise	10			
Pages	141	142	143	144
Numbers	10	11, 13, 14, 15	17	19, 20

Exercise 11: The Appendicular Skeleton

- Complete the following activities for Exercise 11:  
Activity 1: Examine and Identify the Bones of the Appendicular Skeleton  
Activity 6: Constructing a Skeleton
- Complete the following exercises:

Exercise	11					
Pages	157	158	159	160	161	162
Numbers	1	3, 4, 5	6, 7	10, 12, 13	15	17

**Lab 6: Wednesday July 8**

Exercise 14: Microscopic Anatomy and Organization of Skeletal Muscle

- Complete the following activities for Exercise 14:  
Activity 1: Examine Skeletal Muscle Cell Anatomy  
Activity 2: Histological Structure of Skeletal Muscle (NO SLIDE use figure 14.4 to identify

structures)

- Complete the following exercises:

Exercise	14		
Pages	193	194	195
Numbers	1, 2	6	7

Exercise 15: Gross Anatomy of the Muscular System

- Complete the following activities for Exercise 15:  
STUDY FIGURES 15.2 and 15.3 along with their corresponding origins insertions and actions.  
Identify as many of these muscles on the models in the lab.
- Complete the following exercises:

Exercise	15	
Pages	232	233
Numbers	All	All

**Lab 7: Monday July 13 QUIZ #2 (Bones list quiz)**

Exercise 19: Gross Anatomy of Brain and Cranial Nerves

- Complete the following activities for Exercise 19:  
Dissection of the Sheep Brain Page 293-297  
Table 19.1 Cranial Nerves
- Complete the following exercises:

Exercise	19				
Pages	299	300	301	302	304
Numbers	1	5, 6	10, 11	14	17, 18

**Lab 8: Tuesday July 14 Quiz #3 (Muscle list quiz)**

**Cow Eye Dissection**

**MAKE-UP class → Wednesday JULY 15**