BIO- 13101, Anatomy & Physiology I Lab  
Summer 2013, 1.0 Credits

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Schedule (class times and day(s)):  Monday-Wednesday 11:00-1:30 PM  
June 24, 2013 to July 10, 2013
Room:  Higgins 380

Boston College Mission Statement

Strengthened by more than a century and a half of dedication to academic excellence, Boston College commits itself to
the highest standards of teaching and research in undergraduate, graduate and professional programs and to the pursuit
of a just society through its own accomplishments, the work of its faculty and staff, and the achievements of its
graduates. It seeks both to advance its place among the nation's finest universities and to bring to the company of its
distinguished peers and to contemporary society the richness of the Catholic intellectual ideal of a mutually
illuminating relationship between religious faith and free intellectual inquiry.

Boston College draws inspiration for its academic societal mission from its distinctive religious tradition. As a Catholic
and Jesuit university, it is rooted in a world view that encounters God in all creation and through all human activity,
especially in the search for truth in every discipline, in the desire to learn, and in the call to live justly together. In this
spirit, the University regards the contribution of different religious traditions and value systems as essential to the
fullness of its intellectual life and to the continuous development of its distinctive intellectual heritage.

Course Description
Course Description: Dissection, the study of anatomical models, microscopic examination of
tissues and physiological experiments. Reinforces the lecture material.

Laboratory Objectives:
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 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.

Summer Grading System
The undergraduate grading system consists of twelve categories: A (4.00), A- (3.67), excellent; B+ (3.33), B (3.00), B- (2.67), good; C+ (2.33), C (2.00), C- (1.67), satisfactory; D+ (1.33), D (1.00), D- (.67), passing but unsatisfactory; F (.00), failure; I (.00), incomplete; F (.00), course dropped without notifying office; W (.00), official withdrawal from course. The graduate grading system is A (4.00), A- (3.67), Excellent; B+ (3.33), B (3.00), good; B- (2.67), C (2.00), passing but not for degree credit; F (.00), failure.

Grade Reports. All students are required to log into the web through Agora to access their summer grades. Students must utilize their BC username and password to log on. If your username or password is not known, the HELP Desk located in the Campus Technology Resource Center (CTRC) in O’Neill Library will issue a new one. The CTRC requires a valid picture ID (a BC ID, driver’s license or passport) to obtain your password.

Laboratory Syllabus for ANATOMY & PHYSIOLOGY I Summer Session 2013
You will need the Cat Version in the 9th ed or 10th ed of the Marieb Laboratory Manual for Human Anatomy and Physiology by Pearson/Benjamin Cummings Publisher. ISBN 9780321765581. Please see your professor for any exceptions. All laboratory exercises that need to be handed into you TA are listed below. Your TA will be going through the activities listed below with you, but you will also be working in groups and with a lab partner at times. Please be respectful to everyone in the lab!

Your grade is composed of:

20% participation (being there on time, working on what you should be working on in lab, listening to the TA)

40% lab “reports” (from lab manual pages assigned below. Work on this in lab to get it done especially if there is time left in lab. Work with people in the lab to complete it and ask your TA if you need help!)

40% lab quizzes (made by the professor, given at the beginning of lab)

Lab 1: June 24
Exercise 3: The Microscope

- Complete the following activities for Exercise 3:
  Activity 1: Identifying Parts of the Microscope
  Activity 5: Preparing & Observing a Wet Mount

- 9th ed Page 35 #1,2; page 36 #3, 4; page 38 #12, 13
- 10th ed Page 35 #1,2; page 36 #3, 4; page 38 #12, 13

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

- 9th ed Page 11 #1,2,34; page 12 #6, 7; page 13 #9, 10; page 14 #11, 12, 13, 14, 15, 16
- 10th ed Page 11 #1,2,34; page 12 #6, 7; page 13 #9, 10; page 14 #11, 12, 13, 14, 15, 16

Lab 2: June 25

Exercise 4: The Cell

- Complete the following activities for Exercise 4:
  Activity 6: Identifying the Mitotic Stages

- 9th ed Page 49 #1, 2, 3; page 50 #4; page 51 #8, 9; page 52 #11, 12, 13
- 10th ed Page 49 #1, 2, 3; page 50 #4; page 51 #8, 9; page 52 #11, 12, 13

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 Muscle Tissue
  Activity 4: Examining Nervous Tissue
Exercise 7: The Integumentary System

- Complete the following activities for Exercise 7:
  - Activity 6: Taking and Identifying Inked Fingerprints

Lab 3: June 26

LAB QUIZ (ON EVERYTHING FROM LAB 1 AND LAB 2)

Exercise 9: Overview of the Skeleton

- Complete the following activities for Exercise 9:
  - Activity 1: Examining a Long Bone
  - Activity 4: Examining the Microscopic Structure of Compact Bone
  - Activity 6: Observing the Microscopic Structure of Different Types of Cartilage

Exercise 10: The Axial Skeleton

- Complete the following activities for Exercise 10:
  - Activity 1: Identifying the Bones of the Skull (Only the ones that have been assigned)
  - Activity 4: Examining Vertebral Structure
  - Activity 5: Examining The Relationship Between Ribs and Vertebrae

Lab 4: July 1
**Exercise 11: The Appendicular Skeleton**

- Complete the following activities for Exercise 11:
  Examine and Identify the Bones of the Appendicular Skeleton Using your lab manual, text, and bone models available. Study from the list that was given to you.

- 9th ed Page 157 #1; page 158 #5; page 159 #6, 8 page 160 #10; page 161 #15; page 162 #16, 17 (continues on page 163)
- 10th ed Page 157 #1; page 158 #5; page 159 #6, 8 page 160 #10; page 161 #15; page 162 #16, 17 (continues on page 163)

**Exercise 13: Articulations and Body Movements**

- Complete the following activities for Exercise 13: USE MODELS PROVIDED for the following:
  Activity 1: Identifying Fibrous Joints
  Activity 2: Identifying Cartilaginous Joints
  Activity 3: Identifying Synovial Joints
  Activity 5: Demonstrating Movements of Synovial Joints

- 9th ed Page 183 #1; page 184 #3, 5, 6 page 185 #7; page 186 #12, 13, 14
- 10th ed Page 183 #1; page 184 #3, 5, 6 page 185 #7; page 186 #12, 13, 14

**Lab 5: July 2**

**LAB QUIZ (ON EVERYTHING FROM LAB 3 AND LAB 4)**

**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 (use figure 14.4 to identify structures)

- 9th ed Page 193 #1; page 194 #6; page 195 #7, 8
- 10th ed Page 193 #1; page 194 #6; page 195 #7, 8

**Lab 6: July 3**

**Exercise 15: Gross Anatomy of the Muscular System**
• Complete the following activities for Exercise 15: STUDY THE LIST GIVEN TO YOU
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.

• 9th ed Pages 232 and 233
• 10th ed Pages 232 and 233

Lab 7: July 8

(Lecture Exam I to be given during this time, due to July 4th Holiday)

Lab 8: July 9

Exercise 19: Gross Anatomy of Brain and Cranial Nerves

• Complete the following activities for Exercise 19:
  Dissection of the Sheep Brain Page 214-218
  Table 19.1 Cranial Nerves

• 9th ed Pages 299 #1,2,3,4; page 301 #8,10,11,12; page 302 #13, 14; page 303 #15; page 304#17, 18
• 10th ed Pages 297 #1,2,3,4; page 299 #8,10,11,12; page 300 #13, 14; page 301 #15; page 302# 17, 18

Lab 9: July 10

LAB QUIZ (ON EVERYTHING FROM LAB 5 AND LAB 6)

Anatomy & Physiology Laboratory Rules

1. The following rules apply to all Anatomy & Physiology students while using the lab. Please read the following rules carefully.

2. Note the locations of the following safety devices: exits, shower, fire extinguisher, fire blanket, eye wash, gas switch, first aid kit, and burn station.
3. 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.

4. There is to be NO FOOD OR DRINK IN THE ROOM during lab time, this includes GUM!!!!!!

5. 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.

6. 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.

7. Lab aprons, glove, and goggles will be provided. These items must be worn when your instructor tells you to do so.

8. Always wash work areas with disinfectant at the beginning and end of the lab.

9. Always wash hands with soap at the beginning and end of lab.

10. 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.

11. 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.

12. 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!