BIOLOGY 243L
HUMAN ANATOMY AND PHYSIOLOGY I LABORATORY

BULLETIN INFORMATION
BIOL 243L: Human Anatomy and Physiology I Laboratory (1 credit hour)
Course Description:
The principles of anatomy and physiology as demonstrated by microscopic studies, animal
dissection, and physiological experiments.
Prerequisites: BIOL 243
Note: One three-hour laboratory per week.

SAMPLE COURSE OVERVIEW
BIOL 243L is the first part of a two part laboratory sequence covering Human Anatomy and
Physiology and is the laboratory accompanying BIOL 243. The students learn the principles of
human anatomy and physiology, which are demonstrated by microscopic studies, animal
dissection, and physiological experiments. BIOL 243L is designed for pre-pharmacy and
pre-nursing students and others seeking a human anatomy and physiology course. BIOL 243L is
not available for major credit. The following topics will be covered in BIOL 243L: language of
anatomy, light microscopy, cytology, histology, the skeletal system including articulations and
the muscular system. Microscope slides, models of human organs and cat dissections will be
utilized to facilitate the understanding of important aspects of the topics described above. The
construction and testing of hypotheses pertaining to how organ function reflects its anatomical
organization at cellular level will be incorporated. Students will also demonstrate their
understanding of the scientific method by observation and inquiry that will lead to their ability
to identify, classify, describe, and explain the structure and functions of different human cell
types, tissues, organ systems, in particular the integumentary, skeletal, muscular, and nervous
systems. The societal implications of human anatomy and physiology as impacted by modern
medicine will only be briefly discussed. These topics will be covered in more detail in the
accompanying lecture course, BIOL 243.

ITEMIZED LEARNING OUTCOMES
Upon successful completion of Biology 243L, students will be able to:
1. Define, understand, and use scientific, biological, and medical terminology relating to
   anatomy and physiology.
2. Demonstrate an understanding of life processes that power, support, and move parts of
   the human body.
3. Identify, classify, describe, and explain the structure and function of human cells,
tissues, and organ systems, including the integumentary, skeletal, muscular, and
nervous systems.
4. Examine organ morphology and structure through observation.
5. Construct hypotheses about how organ morphology and structure optimize organ function.
6. Discuss the societal implications of contemporary medical and technological advances such as stem cell research, genomics, organ/cell transplantation, and regenerative medicine.

SAMPLE REQUIRED TEXTS/SUGGESTED READINGS/MATERIALS
1. Human Anatomy and Physiology Laboratory Manual, Cat Version by E. N. Marieb

SAMPLE ASSIGNMENTS AND/OR EXAMS
1. Three (3) practical exams
2. Quizzes at the beginning of each lab session
3. Student Evaluation: Quizzes will evaluate the student’s understanding of the upcoming laboratory using a simple fill in the blank format. Exams will require students to demonstrate knowledge of basic scientific terminology relating to anatomy and physiology, and to apply this knowledge by identifying structures in models or dissected animals and answering hypothetical physiological questions. Exam questions will test the student’s analytical thinking pertaining to organ structure and function, and hypothesis building and investigation with respect to human physiology and anatomy. Some exam questions require students to discuss the societal implications of contemporary medical and technological advances such as stem cell research, genomics, organ/cell transplantation, and regenerative medicine.

SAMPLE COURSE OUTLINE WITH TIMELINE OF TOPICS, READINGS/ASSIGNMENTS, EXAMS/PROJECTS
Lab 1: Intro; Terminology; Metric System
Lab 2: Microscope, Cell; Tissues (Histology)
Lab 3: Tissues; Integumentary System
Lab 4: Exam I
Lab 5: Skeletal System
Lab 6: Skeletal System
Lab 7: Muscles
Lab 8: Muscles
Lab 9: Exam II
Lab 10: Brain; Spinal cord; Cranial Nerves
Lab 11: Brain; the Special Senses

Lab 12: Exam III