University of South Carolina
Carolina Core

BIOLOGY 244
HUMAN ANATOMY AND PHYSIOLOGY II

BULLETIN INFORMATION

BIOL 244 – Human Anatomy and Physiology II (3 credit hours)

Course Description:
Functional anatomy and physiology of the human body, including the cardiovascular, endocrine, excretory, reproductive, digestive, and respiratory systems. Not available for biology major credit.

SAMPLE COURSE OVERVIEW

This course is the second of a two-course series that provides a broad overview of human anatomy and physiology. The primary foci of the course are seven of the eleven organ systems of the human body, specifically the endocrine, lymphatic, cardiovascular, respiratory, digestive, urinary, and reproductive systems. For each organ system, we will examine the major anatomical structures, including their names, relative locations, and functions, both individually and as part of an integrated whole. Throughout the course, emphasis will be placed on the relationship between structure and function and the ways in which different parts of the body work to maintain homeostasis. This course is entirely web-based, except for the readings assigned from the required textbook. All other course material, such as lectures (with associated text and audio), assignments, and tests, will be available and completed via Blackboard. The course is divided into Modules (1 Introductory Module and 14 content Modules), each of which will have several sections with associated lectures and non-graded questions to gauge your understanding as you proceed through the material. Each Module will also include a graded Question Set that assesses your understanding and prepares you for exams.

ITEMIZED LEARNING OUTCOMES

Upon successful completion of Biology 634, students will be able to:

1. Define and employ correctly anatomical and physiological terminology.
2. Explain the structure and function of the digestive, respiratory, circulatory, immune, endocrine, renal, and reproductive systems and apply this information to new medical and therapeutic issues, questions, and advances in these areas.
3. Explain how foods are broken down in the body and the interrelationships among the different energy sources, and apply this knowledge to evaluate questions and issues in human disease and physiology, such as type 2 diabetes.

4. Explain how gases (oxygen and carbon dioxide) are carried in the blood and exchanged in the lungs and tissues, and apply this knowledge to evaluate questions and issues in human disease and physiology, such as COPD.
5. Explain how the heart functions, what regulates blood pressure, and how blood distribution is controlled, and apply this knowledge to evaluate questions and issues in human disease and physiology, such as atherosclerosis and heart disease.
6. Explain innate and acquired immunity and how the body uses this to defend itself, and apply this knowledge to evaluate questions and issues in human disease and physiology, such as AIDS and organ transplantation.
7. Explain how the body uses hormones to coordinate various functions, and apply this knowledge to evaluate questions and issues in human disease and physiology, such as type 2 diabetes and other endocrine diseases.
8. Explain how the kidneys remove waste products and regulate water and mineral metabolism, and apply this knowledge to evaluate questions and issues in human disease and physiology, such as kidney failure.
9. Explain how gametes are produced and trace early development from the fertilized ovum to the formation of the early embryo, and apply this knowledge to evaluate questions and issues in human disease and physiology, such as birth control and assisted reproduction
10. Construct hypotheses concerning the function of various body parts and evaluate these hypotheses by closely analyzing the morphology of these structures.
11. Discuss the societal implications of recent advances in biomedical research related to these systems.

SAMPLE REQUIRED TEXTS/SUGGESTED READINGS/MATERIALS

Marieb EN, and Hoehn K. 2015. *Human Anatomy and Physiology 10th Edition*. Boston: Pearson. ISBN: 0133997049.

SAMPLE ASSIGNMENTS AND/OR EXAMS

1. **Exam:** There are three exams during the semester, which are not cumulative (i.e. the first exam includes material from the beginning of the course, and the second and third exams include only the material covered since the preceding exam), and a final exam, which is cumulative. All exams will consist of matching, true/false, or multiple-choice questions. The first three exams have 50 questions and are worth 100 points, and the final has 75 questions and is worth 150 points. Exams will be taken online using the Respondus LockDown Browser in Blackboard, which will prevent you from printing, copying, accessing another URL, or access other applications once you begin the exam. You will have 60 minutes to complete the exams and 90 minutes to complete the final. Make-ups will only be allowed for valid, documented excuses.
2. **Question Sets:** There are 15 question sets throughout the semester, one for the Syllabus and each Module as detailed in the schedule below. These question sets will consist of 10 questions and will be available during the Modules indicated in the schedule. Each

question set is worth 10 points, and your highest score for each question set will be included in your grade. Given that you can make unlimited attempts, no one should earn less than 10 points for each question set. However, make-ups will not be allowed for the question sets, regardless of your reason for missing one.

SAMPLE COURSE OUTLINE WITH TIMELINE OF TOPICS, READINGS/ASSIGNMENTS, EXAMS/PROJECTS

Week 1: Introduction to the course
Endocrine System

Week 2: Blood and Lymphatics

Week 3: Immunity

Week 4: Heart
Exam 1 (Chapters 16, 17, 20, 21)

Week 5: Heart

Week 6: Blood Vessels

Week 7: Respiratory System

Week 8: Digestive System
Exam 2 (Chapters 18, 19, 22)

Week 9: Metabolism

Week 10: Urinary System

Week 11: Fluid, Electrolyte, and Acid-Base Balance

Week 12: Reproductive System
Exam 3 (Chapters 23, 24, 25, 26)

Week 13: Reproductive System

Week 14: Pregnancy
Review for Final Exam

FINAL EXAM according to University exam schedule