

Biology 4210 ~ ADVANCED PHYSIOLOGY I
FALL 2 2009

CLASS: **Wednesday, 5:30-9:30**

CREDIT HOURS: 3

INSTRUCTOR:

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COURSE DESCRIPTION:

This course is designed to provide the student with a fuller understanding of the mechanisms involved in maintaining homeostasis in the human body. Throughout the course, the student will examine specific details of systemic functions under both normal and pathological conditions. Discussions of the pathophysiologies of common and representative diseases will be used to correlate the theoretical and clinical aspects of human physiological responses. Upon the successful completion of this course, the student will be adequately informed in the discussion of modern theories which explain human physiology and pathophysiology. This information should prepare the student for further studies in this area in graduate school and/or will provide the theoretical basis for clinical assessments and treatments in the medical and health care fields.

Because of the extensive nature of physiology, it is impossible to present all the important aspects of human physiology under the limitations of an eight week course schedule. For this reason, two different Advanced Physiology courses are taught (Biology 4210 and Biology 4220). This course will focus on the following topics of discussion: Excitable Membrane Physiology, Cardiovascular Physiology, Respiratory Physiology, Renal Physiology, Acid/Base Balance, and Fluid/Electrolyte Balance.

COURSE OBJECTIVES:

At the completion of the course the student will be expected to:

1. Utilize the basic knowledge of the biological and physical sciences in understanding both normal physiological and pathophysiological concepts.
2. Develop a more in-depth understanding of physiological processes as they relate to the function of major body systems.
3. Describe the essential characteristics of basic disease processes affecting the Cardiovascular, respiratory, and renal systems.
4. Discuss the major concepts related to fluid and electrolyte and acid/base balance in the human body.

TEACHING STRATEGIES:

Lecture Case Studies Concept Mapping
Discussion Audiovisual

REQUIRED TEXTBOOK:

Guyton, A. C., & Hall, J. E. (2002). *Human physiology and mechanisms of disease* (6th ed.). Philadelphia: Saunders.

EVALUATION METHODS:

Course grades will be based on a total of 200 cumulative points. There will be two written group examinations worth 50 points each. The two written exams will cover information presented in class and from textbook readings. Exams will consist of multiple choice, matching, and brief essay questions. Students will also be required to develop two hypothetical case studies based on a pathophysiological topic. These two case studies will be worth 30 points each and will be presented within the context of the course. Each student will develop a concept map worth 25 points related to one of their two case studies. The remaining 15 class points will be based on class participation and attendance. Pop quizzes for additional bonus points may be given at the discretion of the instructor. Students must be present in class to earn these bonus points. The student's final grade will be determined from the percentage of points obtained during the course.

GRADING SCALE:

A 95-100
A- 93-94
B+ 91-92
B 87-90
B- 85-86
C+ 83-84
C 77-82
D 70-76
F 69 and below

COURSE POLICIES:

Attendance at all scheduled classes is expected. Absences from class and late attendance will be reflected in the student's final grade. If the student is ill and unable to attend class and/or take an exam, the instructor should be notified prior to the starting time of class. Failure to notify the instructor prior to a scheduled exam will result in a 10% penalty on the exam grade. If the faculty member cannot be contacted directly, a message should be left on voice mail. It is the responsibility of the student to contact the instructor regarding makeup exams.

Class will start promptly at the scheduled time. Please be conscientious of the starting and break times. Please also place cell phones and pagers on vibrate to avoid in-class disruptions. Lectures may be taped with the permission of the instructor.

University Policies:

Academic Honesty

The university is committed to high standards of academic honesty. Students will be held responsible for violations of these standards. Please refer to the university's academic honesty policies for a definition of academic dishonesty and potential disciplinary actions associated with it. These policies can be found online at: <http://www.webster.edu/graduatecatalog/policies.shtml>

Drops and Withdrawals

Please be aware that, should you choose to drop or withdraw from this course, the date on which you notify the university of your decision will determine the amount of tuition refund you receive. Please refer to the university policies on drops and withdrawals (published elsewhere) to find out what the deadlines are for dropping a course with a full refund and for withdrawing from a course with a partial refund. These policies can be found online at: <http://www.webster.edu/graduatecatalog/policies.shtml>

Special Services

If you are registered as a student with a documented disability and are entitled to classroom or testing accommodations, it is your responsibility to **inform the instructor at the beginning of the course of the accommodations you will require** in this class so that these can be provided. If you have a disability that may have some impact on your work in this class and for which you may require accommodations please contact the Academic Resource Center.

Disturbances

Every student is entitled to full participation in class without interruption, all students are expected participate in all in class and online course activities. Disruption of the learning process or inconsiderate behavior, on line or in class, is not acceptable. Students are expected to treat the instructor and other students with dignity and respect, especially in cases where a diversity of opinion arises. Students who engage in disruptive behavior are subject to disciplinary action, including removal from the course.

Webster University
Biology 4210 - Advanced Physiology I
Class Schedule – Fall 2009

Date	Time	Topic	Reading Assignment
Oct. 28	1730-1830 1830-1930 1930-2130	Introduction to Course Review of the Cell and General Physiology Excitable Tissues: Membrane Potentials & Action Potentials	Ch 1 (p. 3-4, 6-7) Ch 2 Ch 5 (p. 47-54) Ch 6 (p. 59-67)
Nov. 04	1730-2000 2000-2130	Cardiovascular Physiology: Heart as a Pump; Electrical Conduction of Heart; EKG Interpretation Concepts of Circulation: Pressure, Flow & Resistance Regulation of Blood Pressure	Chs 8, 9 & 10 Chs 11 & 14 Chs 15 & 16
Nov. 11	1730-1930 1930-2130	Student Case Study Presentations: CV Topics Respiratory Physiology: Pulmonary Ventilation & Circulation Oxygen & Carbon Dioxide Transport Acid/Base Balance END OF CONTENT FOR EXAM I	Ch 27 Chs 28 & 29 Ch 23 (pp. 256-264)
Nov 18	1730-1900 1900-2130	GROUP EXAM 1 Student Case Study Presentations: Respiratory Topics	
Nov 25		NO CLASS – Work on Concept Maps	
Dec. 02	1730-1930 1930-2130	Hemostasis & Blood Coagulation Alterations in Hematology: Anemias, Leukemias, Lymphomas Renal Physiology: Normal Renal Function Urine Formation Fluid & Electrolyte Balance: Regulation of Intracellular & Extracellular Fluids END OF CONTENT FOR EXAM II	Ch 26 Ch 24 (pp. 280-286) Ch 21 Ch 23 (pp. 264-270) Chs 20 & 22
Dec. 09	1730-2130	Student Case Study Presentations: Hematology & Renal Topics CONCEPT MAPS DUE	
Dec. 16	1730-2130	GROUP EXAM II Student Case Study Presentations Cont'd (if needed) Sharing of Concept Maps	