BIO 4161 — Human Anatomy & Physiology 1
Spring 2009, 12 week term
06 April 2009 – 28 June 2009

Instructor Name:
Carl F Moxey, PhD
Senior Lecturer in Biology
College of Professional Studies, Northeastern University
Boston, Massachusetts
E-mail:
c.moxey@neu.edu
Phone Number:
508-849-3384

Required Text &Tools:

Textbook:

FH Martini & JL Nath, 2009, *Fundamentals of Human Anatomy & Physiology*, 8th edition,
Benjamin Cummings, San Francisco
ISBN 0-321-50589-1

Tools:

This course may contain audio material and in some instances, you may be asked to participate in audio-based activities, such as a Voice Discussion Board. A headset (headphones plus microphone) will allow you to hear and record audio. The Logitech ClearChat Comfort USB Headset, or the Plantronics Audio 470 or 500, or comparable brands/models, are recommended. Headsets can be purchased from online vendors such as amazon.com, bestbuy.com, or newegg.com.

Course Prerequisites

None, but courses in general and animal biology or equivalent are strongly recommended. Prior courses in mathematics and physics or chemistry would be useful.

Course Description

Topics include terminology and basic gross organization of the body, functional anatomy of the musculoskeletal system, and an overview of the thoracic and abdominal viscera.

Course Outcomes

During this course, you will have the opportunity to become conversant with and knowledgeable about the anatomy and physiology of skin and the musculoskeletal and nervous systems so that you may be able to:

- delineate the scope of anatomy and physiology, correctly using directional and relational terms
- describe types of biological chemicals and their reactions;
- diagram the structure of the cell membrane, and describe how substances can move across membranes;
- describe the anatomy of the skin, with functional considerations of its different components;
- give a detailed description of the structure of bone and cartilage along with the processes of osteogenesis;
- classify the types of joints, describing their axes and movements;
- diagram the events of action potentials;
- describe muscle microanatomy and how it relates to the events of excitation-contraction coupling;
- discuss how the embryology of the nervous system relates to its adult design;
- list the components of the central and peripheral nervous systems;
- discuss reflexes and their significance.

Course Methodology

Each week, you will be expected to:

Review the week's learning objectives. (10 minutes)
Complete all assigned readings. (2 hours)
Complete all lecture materials for the week. (2 hours)
Participate in the Discussion Board. (1 hour)
Complete and submit all assignments and tests by the due dates. (1 hour)

The specified times in parentheses are my estimates of the minimum time necessary for an average student to complete the course objectives successfully. These estimates will probably vary from topic to topic.

Participation/Discussion Board

You should participate in the Discussion Board following these guidelines:

Each week you must post at least one "primary response" (that is, answering a discussion question) and two "secondary responses" (responses to other students' posts).
Participation counts for 30% of your total course grade.
Responses to the discussion board are due by 2359 on Sunday each week.
Your responses should stay on-topic, provide substantive information, and be in clear and grammatically correct English, with proper spelling and punctuation.

Communication/Submission of Work

In the Assignments folder, click on the View/Complete Assignment link to view each assignment. Attach your completed assignments here (Blackboard) and click Submit to turn them in to me. Once your assignment has been graded, you will be able to view the grade and feedback I have provided by clicking on Tools, View Grades from the Northeastern University Online Campus tab.

While it is perfectly reasonable for you to communicate with me or with each other by e-mail, it is best for you to post content-oriented material in the Discussion Board so that all students can benefit from each others' learning.

Grading/Evaluation Standards

Your final grade will be determined by your performance in four aspects of the course:

- Discussion Board participation 30%
- Weekly quizzes 40%
- Cumulative final exam 30%

Since this is an on-line course, without specified meeting time, it is expected that you will complete each week's assignment within the scheduled week (Monday–Sunday). Quizzes and examinations will only be available for the specified time interval; failure to complete the assignment within that time interval will result in a zero for that assignment. Under only the most extenuating of circumstances will an extension be granted, and you *must* contact me *before* the end-time of the assignment to obtain such extension.

Please read the discussion of grading standards in the CPS Student Handbook at:
http://www.cps.neu.edu/student-services/student-handbook.
I expect that your written work be clear, comprehensible, and competently produced.

Class Schedule / Topical Outline

Week	Dates	Topic	Assignments
1	4/6 – 4/12	Terminology and Body Systems	Martini, chapter 1 *Quiz 1*
2	4/13 – 4/19	Biological Chemistry	Martini, chapter 2 *Quiz 2*
3	4/20 – 4/26	Membrane Transport	Martini, chapter 3 *Quiz 3*
4	4/27 – 5/3	Integumentary System	Martini, chapter 5 *Quiz 4*
5	5/4 – 5/10	Cartilage, Bone, and Osteogenesis	Martini, chapter 6 *Quiz 5*
6	5/11 – 5/7	Articulations and Movements	Martini, chapter 9 *Quiz 6*
7	5/18 – 5/24	Membrane Potentials and Action Potentials	Martini, chapter 12 *Quiz 7*
8	5/25 – 5/31	Muscle Microanatomy and the Physiology of Contraction	Martini, chapter 10 *Quiz 8*
9	6/1 – 6/7	Properties of Cardiac and Smooth Muscle	Martini, chapter 10 *Quiz 9*
10	6/8 – 6/14	Design of the Nervous System	Martini, chapter 12 *Quiz 10*
11	6/15 – 6/21	Spinal Cord and Reflexes	Martini, chapter 13 *Quiz 11*
12	6/22 – 6/28	Review	*Final Exam*

Academic Honesty and Integrity Statement

The University views academic dishonesty as one of the most serious offenses that a student can commit while in college and imposes appropriate punitive sanctions on violators. Here are some examples of academic dishonesty. While this is not an all-inclusive list, we hope this will help you to understand some of the things instructors look for. The following is excerpted from the University's policy on academic honesty and integrity; the complete policy is available at:

http://www.cps.neu.edu/about-cps/policies-and-procedures.

Cheating – intentionally using or attempting to use unauthorized materials, information or study aids in an academic exercise. This may include use of unauthorized aids (notes, texts) or copying from another student's exam, paper, computer disk, etc.

Fabrication – intentional and unauthorized falsification, misrepresentation, or invention of any data, or citation in an academic exercise. Examples may include making up data for a research paper, altering the results of a lab experiment or survey, listing a citation for a source not used, or stating an opinion as a scientifically proven fact.

Plagiarism – intentionally representing the words or ideas of another as one's own in any academic exercise without providing proper documentation by source by way of a footnote, endnote or intertextual note.

Unauthorized collaboration – Students, each claiming sole authorship, submit separate reports, which are substantially similar to one another. While several students may have the same source material, the analysis, interpretation and reporting of the data must be each individual's.

Participation in academically dishonest activities – Examples include stealing an exam, using a pre-written paper through mail order or other services, selling, loaning or otherwise distributing materials for the purpose of cheating, plagiarism, or other academically dishonest acts; alternation, theft, forgery, or destruction of the academic work of others.

Facilitating academic dishonesty – Examples may include inaccurately listing someone as co-author of paper who did not contribute, sharing a take home exam, taking an exam or writing a paper for another student.

Northeastern University Online Policies and Procedures

For comprehensive information please go to:

http://www.cps.neu.edu/online/

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