

## AANT 316 (7285)

### Human Anatomy and Physiology I

Fall 2011

<b>Instructor:</b>	Dr. Robert McCarthy	<b>Time:</b>	Fri. 2:45 – 4:35
<b>Office:</b>	AS 107	<b>Place:</b>	LC 23
<b>Phone:</b>	(518)442-4715	<b>Format:</b>	Lecture and lab
<b>E-mail:</b>	<a href="mailto:rmccarthy2@albany.edu">rmccarthy2@albany.edu</a>		
<b>Office hours:</b>	T 8-10, Th 12-2, F 12-2		

<b>TAs</b>	Jordan Karstens	Amanda Spriggs	Kiersten Yates Westbrook
<b>Office:</b>	AS 110	AS 110	AS 110
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<b>Office hours:</b>	W 2-4	T 10-12	M 10:30-11:30, F 11-12
<b>Labs:</b>	7286 AS	W 8:15 am – 10:15 am	All labs will be held in AS 11, in the basement of the Arts and Sciences building
	7287 AS	W 10:25 am – 12:25 pm	
	7288 KF	M 8:15 am – 10:15 am	
	7289 JK	F 8:15 am – 10:15 am	
	7906 JK	F 10:25 am – 12:25 pm	
	7907 KF	F 12:35 am – 2:35 pm	

**Course objectives:** This course provides an introduction to human anatomy and physiology. These topics refer to the form and function of the human body, and are presented together in an integrated two-semester course sequence. This course focuses on basic concepts in anatomy and physiology, embryology, the peripheral nervous system, respiration, the cardiovascular system, and the musculoskeletal system of the upper limb, thorax, and back. Next semester, you will be learning about the gastrointestinal tract, digestion, the urogenital and endocrine systems, and the musculoskeletal system of the lower limb, head, and neck. This course sequence provides a foundation for students interested in human biology, biological anthropology, medicine, and allied health professions.

**Learning goals:** At the end of this two-semester course sequence, you will be able to (1) use appropriate terminology to communicate information related to anatomy and physiology; (2) recognize anatomical structures and explain the physiological functions of body systems; (3) explain the principle of homeostasis; (4) use anatomical knowledge to predict physiological consequences, and use knowledge of function to predict the features of anatomical structures; (5) explain the interrelationships within and between anatomical and physiological systems of the human body; (6) synthesize ideas to make a connection between knowledge of anatomy and physiology and real-world situations; (7) demonstrate laboratory procedures used to examine anatomical structures and evaluate physiological functions of each organ system; (8) interpret graphs of anatomical and physiological data (adapted from HAPS Learning Outcomes Project, 2010).

Course requirements: Three multiple-choice exams. Exams 1 and 2 are each worth 20% of your grade, and are NOT cumulative. **Exam #1 will be administered in lab, and Exam #2 and the Final Exam in lecture.** The final exam is worth 35% of your final grade, and IS cumulative. All three exams will be multiple-choice. In addition, there are weekly lab assignments and quizzes that are collectively worth 25% of your grade.

Textbooks and readings:

- (1) Grine, Frederick E. (2008). *Regional Human Anatomy: A Laboratory Workbook for Use with Models and Prosections*, 4<sup>th</sup> Ed. McGraw-Hill.
- (2) Fox, Stuart I. (2009). *Fundamental of Human Physiology*. McGraw-Hill.
- (3) Schneider, Roy E. et al. (2011). *Anatomy and Physiology Revealed v. 3.0*. McGraw-Hill.

In addition to reading the textbooks, students will be expected to read supplemental handouts posted on Blackboard. Embryology readings from *Langman's Medical Embryology* will be available on Blackboard. Please be sure to check Blackboard regularly, as there will be new announcements, articles, handouts, and grades posted throughout the semester.

Expectations: We have a lot of material to cover in this course and a very short amount of time to cover it. Students will be expected to (1) prepare for class by reading the book(s) and supplemental readings; (2) come to class on time, prepared to take notes and participate in discussions; (3) study outside of class; (4) regularly attend labs and participate in lab activities. Attendance will not be taken in the lecture, but students will find it difficult to do well in this course without attending lecture regularly. Students will be expected to follow rules of common courtesy, including turning off your cell phone and only using computers to look at Powerpoint lectures. Students who disrupt the class will be given one warning before being asked to leave.

Advice – how to learn and study: Recent research shows that students learn best by active learning. What does this mean? First, it is important to recognize that there is a difference between studying and learning. Students who “cram” for a test may retain a relatively small amount of information for a few hours or days, whereas students who actively learn retain information for years. Students learn best when they are engaged by the material and motivated to think about it in different ways. Part of this is our job, but it is up to you to become an “expert learner.” One recent study (McGuire, 2005) suggests the following strategy:

- (1) Preview material to be covered in class;
- (2) Go to class – listen, take notes, participate when appropriate;
- (3) Review and process class notes, as soon after class as possible;
- (4) Implement intense study sessions
  - a. For every hour spent studying, spend 2-5 minutes setting goals and planning;
  - b. 45 minutes studying with FOCUS and ACTION – making study cards, running through problems, quizzing yourself or others, etc.
  - c. 5 minute break, then 5 minute review;
- (5) Repeat;
- (6) Once per week, review the entire week's work.

If you follow this strategy you will have no problem with this or any other class.

## COURSE SCHEDULE

Date	Topic	Reading	Activity/Lab
9/2	Introduction, anatomical terminology, basic embryology	F1-6, appendix 4; G1-15; S55-87	NO LAB
9/9	Chemistry refresher, cell biology	F7-34	NO LAB
9/16	Basic concepts in physiology: cells and tissues	F35-40, 49-55, ch. 3	Terminology/osteology
9/23	Energetics I: cellular energetics, glycolysis	F ch. 2, 41-49, appendix 2	Metabolism
9/30	NO CLASS – BREAK	-	NO LAB
10/7	CLASSES SUSPENDED AT 2:30 PM	-	<b>EXAM #1 during lab</b>
10/14	Energetics II: aerobic metabolism, ventilation	F ch. 2, 3, 12; G268-283	Thorax
10/21	Respiration physiology	F ch. 12	Physiology of respiration
10/28	Physiology of nerve impulse conduction	F ch. 4	Nerve impulse conduction
11/4	Peripheral nervous system: somatic and visceral innervation	G34-39; F ch. 6	Vert. column, spine, PNS
11/11	Heart and great vessels	G284-299	<b>EXAM #2; Vasculature</b>
11/18	Cardiovascular physiology	F ch. 10	Cardiovascular physiology
11/25	NO CLASS – THANKSGIVING	-	-
12/2	Musculature and movements of the back, shoulder, arm	G40-46, 68-73	Osteology, muscles, movements of upper limb
12/8	Musculature and movements of the forearm and hand	G74-85	<b>NOTE: THURSDAY!</b>
12/9	<b>LECTURE CENTER ROOM 23 5:45 – 7:45</b>		<b>FINAL EXAM</b>

G=Grine (2008), *Regional Human Anatomy*; S=Sadler (2006), *Langman's Medical Embryology* – available on Blackboard; F=Fox (2009), *Fundamental of Human Physiology*.