

ANATOMY AND PHYSIOLOGY II (15-BIOL-201)

Fall Quarter, 2006-2007

Instructor: Edwin R. Griff, Ph.D. **Office:** 828A Rieveschl
Phone: 556-9739; 556-9700 (Dept. office) **email:** edwin.griff@UC.EDU
Office Hours: To be announced

REQUIRED BOOKS:

Human Anatomy and Physiology, by Marieb
Pearson/Benjamin Cummings, 2004 (sixth edition). Note that the text comes with
an excellent CD called interActive Physiology

Human Anatomy and Physiology Laboratory Manual, by Marieb, Pearson/Benjamin
Cummings, 2006 (seventh edition).

Course Web Site: <http://blackboard.uc.edu>. **Note** that all the lab sections linked to the TH 2:00-3:15 lecture are combined into a Meta-course, (Meta06A) Anat & Phys I. Material related to the lecture, lecture grades, and information relevant to all lab sections will be posed on the Meta-course. Your individual lab section Blackboard course will contain lab information that is specific to your lab section and will usually be posted by your lab instructor. **Please make sure** that the email address listed with your Blackboard account under personal information is accurate and that it is an email account that you check regularly.

REQUIRED PRS KEYPAD: For in-class quizzes, students will need to purchase and register a Personal Response System Keypad, available from the UC bookstore. Once purchased, the PRS keypad must be registered; follow the instructions posted on the Meta-course web site.

GRADING POLICY:

One course grade will be given for each quarter of Anatomy and Physiology based on a total of 600 points; 200 points come from the lab, based on 3 lab practical exams, 5 quizzes and 2 PhysioEx assignments (see lab syllabus for details).

400 points will come from the lecture, based on 2 exams (100 points for the 1st exam, 110 for the 2nd), a comprehensive final exam (160 points), and in class quizzes (30 points)

A letter grade for the course will be assigned based on the following approximate distribution: A = 534 points or more (89% or higher); B = 474-533 pts (79-88.9%); C = 414-473 pts (69-78.9%); D = 354-413 pts (59-68.9%); F = below 354 pts 58.9%). Plus/minus grading will not be used in this course. The instructor reserves the right to reduce the number of points required for a given letter grade.

MAKE-UP EXAM POLICY:

There will be no scheduled make-up exams in either lab or lecture. If you are ill the day of your scheduled lab exam, you must contact your TA, the lab director or the course instructor as soon as possible to get permission to take the exam in one of the other lab

sections. If you do not take a lab exam or lab quiz, you will be assigned a failing grade for that exam or quiz.

If you miss one lecture exam, you will be required to take a special comprehensive final exam (200 points) and your course grade will be calculated on the basis of 550 points. If you miss both lecture exams you will not receive a course grade.

If you miss the FINAL EXAM due to documented illness or a documented emergency, a make-up final exam will be administered by the College of Arts & Sciences during the first month of the Winter Quarter.

Cheating

Any indication of academic dishonesty during an exam or quiz will be grounds for a grade of 0 for that activity. The instructor reserves the right to assign a grade of F for the entire course if warranted. *Please read the Student Code of Conduct for a discussion of what constitutes cheating and academic dishonesty.*

Using your textbook

Your Anatomy and Physiology text is encyclopedic; the lecture will provide the best guide for what specific material you will be responsible for learning.

Taking complete notes in lecture is an important aspect of this course. The exams are based on what is presented in class. I do not post my lecture notes on line.

To understand the lectures and take appropriate notes, it will be very helpful for you to know what material is in the text before you attend the lecture on that topic. I strongly recommend that you at least look at the headings and figures in the text on each topic before lecture.

After lecture, you should use the text to fill in your notes, to obtain explanations of the material by another professor (the author), and to review figures and diagrams. Your goal is to understand the lecture sufficiently so that you could present the lecture to someone using your notes. Some students need to read whole sections to get the context; other students can extract information by reading selected paragraphs and/or studying the figures, diagrams, and charts. If you do not understand the material soon after a lecture, it is unlikely that you will understand it a few weeks later. Please come and see me during office hours or by appointment to clarify the material.

My A&P web site: The publisher has a website for the textbook which includes an on-line text with all figures. You need the student access kit that comes with your textbook; go to <http://www.mariebmap.com>. The Course ID is griff52637. There is a wealth of information and tools that will help you with both lecture and lab.

Extra Help

As soon as you realize that you do not understand something, please ask me to re-explain the concept during my office hours. The information presented in this course should make sense in terms of what you have learned in other courses, previous knowledge about anatomy and physiology, and any information you have about clinical situations. If something does not seem right or make sense, please ask me for a clarification.

<u>Date</u>	<u>LECTURE and READINGS SCHEDULE (tentative)</u>		
<u>Week 1</u>	Sept.	21	Structure/function relationships; homeostasis, atoms, chemical bonds Ch.1: 1-12; Ch. 2: 26-36
<u>Week 2</u>	Sept.	26	Chemical reactions, water, aqueous solutions, pH Ch. 2: 36-44
		28	Organic compounds Ch. 2: 44-58
<u>Week 3</u>	Oct.	3	Plasma membrane and transport Ch. 3: 64-82
		5	Cell organelles Ch. 3: 85-92
<u>Week 4</u>	Oct.	10	Cell signaling, cytoskeleton, cell cycle Ch. 3: 82-85; 92-104
		12	LECTURE EXAM #1
<u>Week 5</u>	Oct.	17	Protein synthesis Ch. 3: 104-111
		19	Gene expression, cell differentiation, development Ch 3: 111-113; Ch. 4: 144-147; Ch. 28: 1113-1115
<u>Week 6</u>	Oct.	24	Epithelial and connective tissues Ch. 4: 118-138
		26	Integumentary system Ch. 5: 152-167; Ch. 4: 142-144
<u>Week 7</u>	Oct.	31	Skeletal system, cartilage, bone structure & development Ch. 6: 176-187
	Nov.	2	Fracture, repair, calcium homeostasis Ch. 6: 187-196
<u>Week 8</u>	Nov.	7	LECTURE EXAM #2
		9	Articulations Ch. 8: 253-257; 272-275
<u>Week 9</u>	Nov.	14	Muscular system, muscle structure Ch. 9: 280-288
		16	Muscle contraction Ch. 9: 288-297
<u>Week 10</u>	Nov.	21	Tension development; Muscle metabolism Ch. 9: 297-309;
		23	Thanksgiving: no classes
<u>Week 11</u>		28	glucose metabolism Ch. 24: 955-965
		30	Smooth muscle Ch. 24: 309-315
Thursday,	Dec.	7	FINAL EXAMINATION (1:30 – 3:30 PM)

SUGGESTED READINGS FROM THE TEXTBOOK

The page numbers indicate the general area of the text for each lecture. Your lecture notes provide a more specific guide to the information you are responsible for learning. I strongly advise that you look over the reading **before** the lecture on that topic; 15 – 30 minutes should be adequate to become familiar with the concepts and examples; after lecture, study specific topics in more detail.

Anatomy and Physiology I Laboratory Syllabus

15-BIOL-201 Autumn 2006

French-West 6201 or 6202

Week of:	Lab Exercise Numbers* and Topics
Sept. 20-26	Orientation to A&P lab; safety orientation; Physio-Ex demo. Read and review on your own – Getting Started, p. x-xviii (ask questions in lab if problems.) Ex. 1 - The Language of anatomy [Study outside of class on your own] Ex. 2 - Organ systems Overview, read p. 10-18, do p. 19 in lab; omit examination of preserved animal dissections. Ex. 3 – The Microscope (Activities 1, 2, & 6)
Sept. 27-Oct. 3	Quiz; Ex. 3 - The Microscope (Activities 3-5); Ex. 4 - The Cell – Anatomy and Division; <i>Ex. 5B - The Cell – Transport Mechanisms and Cell Permeability: PhysioEx Computer Simulation, on your own pp. P-1-14</i> Printed Data and Review Sheet Due in lab next week.
Oct. 4-10	Practical #1
Oct. 11-17	Quiz; Ex. 6A - Classification of Tissues; Ex. 7 – The Integumentary System; Ex. 8 - Classification of Body Membranes; [Do <i>PhysioEx Histology module 6B on your own, pp. P-15.</i>]; [Do on your own: <i>AIA “Introduction & Learning to Use AIA” Ex. 1-5</i>]
Oct. 18-24	Quiz; Ex. 9 - Overview of the Skeleton: Classification and Structure of Bones and Cartilages; Ex. 10 - The Axial Skeleton; Ex. 11 - The Appendicular Skeleton (Pectoral Girdle). [On your own: <i>AIA Skeletal System, Ex. 1-28</i>]
Oct. 25-31	Practical #2
Nov. 1-7	Quiz; Ex. 11 - The Appendicular Skeleton (Pelvic Girdle); Ex. 12&13 - Fetal Skeletons and Articulations and Body Movements; Ex. 14 - Microscopic Anatomy of Skeletal Muscle. [On your own: continue with <i>AIA Skeletal System</i>]
Nov. 8-14	No class – Veterans Day Holiday on Friday, Nov. 10 (Friday lab sections will have a makeup lab – see below); Ex. 15 - Gross Anatomy of the Muscular System
Nov. 15-21	Quiz; Dissection of mink muscles; <i>Ex. 16B - Skeletal Muscle Physiology: PhysioEx Computer Simulation, on your own p. P-17,</i> Printed Data and Review Sheet Due in lab Week 10.
Nov. 22-24	No class – Thanksgiving Day Holiday [On your own: <i>AIA Muscular System; Review muscle contraction process with AIP Muscular System</i>]
Nov. 27-Dec. 1	Practical #3

* *Those in italics are computer-based exercises which you will complete on your own time. They are from the Physio-Ex CD-ROM that came packaged with your lab manual or the ADAM Interactive Anatomy CD-ROM that came with the Lafferty Student Lab Guide.*

** Friday lab sections affected by the November 11, 2006 Veterans Day Holiday will be allowed to sign up for lab time from November 8-9 or 13-14 to complete the work.

NOTE: We may *not be following all of these lab exercises directly*; read the details in this syllabus and come *on time* for the pre-lab explanation for further information.

Further Information

Contact information for your laboratory instructor is listed below:

Instructor:

Office:

Phone:

E-mail Address:

Office Hours:

Text: Human Anatomy & Physiology Laboratory Manual, Main Version, 7th ed., Elaine Marieb
A.D.A.M. Interactive Anatomy Student Lab Guide, 2004, Lafferty & Panella
Optional texts: Anatomy Coloring Book; Physiology Coloring Book; Flashcards

Supplementary Materials for lab:

- 1) “**Physio-Ex**” **CD-ROM**, supplied with Marieb lab manual, contains computer simulations of laboratory experiments for topics like muscle physiology. Detailed instructions for its use are in the lab manual, with the appropriate pages listed on your syllabus. There are **two assigned exercises** from the Physio-Ex CD-ROM this quarter.
- 2) “**A.D.A.M. Interactive Anatomy**” (abbreviated *ADAM IA* on your syllabus) CD-ROM supplied with Lafferty text. This program contains detailed anatomical illustrations of the human body which you can manipulate to see various levels of detail. The Lafferty book ADAM Interactive Anatomy Student Lab Guide, contains step-by-step instructions for using this program.

Course Web Site: Blackboard site for the course at: <http://blackboard.uc.edu> The site for your specific section number will contain information specific to your lab section, including quiz or practical information, quiz answer keys, lab grades, etc. The course Meta sites will contain information common to the lab sections tied to each lecture section, such as the syllabus or general announcements.

Attendance: Attendance is *mandatory* for each lab. Because of space limitations in lab, students will generally not be able to make up labs that are missed. You will only be permitted to make up a lab if you have an unavoidable, legitimate problem and documentation is provided. You must obtain *written* permission from your section instructor to attend another lab section during the week, and you must show that written permission to the instructor of the makeup lab. You should also ask permission to take the pre-lab quiz during the lab section you attend. You will receive **up to two points** for attendance at each lab, assigned at the discretion of your lab instructor. The method for assigning those points will be determined by your lab instructor. You may be required to complete a post-lab checklist to verify that you have completed all laboratory exercises, or your instructor may choose to ask you a series of questions at the end of the lab to determine the number of attendance points you receive. For every lab, your **ACTIVE PARTICIPATION** will be required to earn the full two points for attendance.

* NOTE: There is no class on Friday, November 10, 2006 due to a holiday. Therefore, scheduled labs for that day will be completed by students signing into other available lab sections during the affected week (November 8-14, except November 10th) or you will sign up for extra lab times held by lab instructors during that week.

NOTE: Since classes started this quarter on a Wednesday, students should notice from the lab schedule that before Thanksgiving new labs begin on a Weds. and end on the following Tuesday. If you have lab on Monday or Tuesday, this means you will most likely need to make up a lab **BEFORE your scheduled lab day. You should especially keep this in mind if conflicts arise with lab practicals. There is only one week of classes after the Thanksgiving break, and during that week the 3rd practical exam will be given. The practicals will begin that week on Monday and will run through Friday.

Lab Checklists: For each week's lab, a checklist detailing the activities which should be completed in lab will be posted on Blackboard (on the course Meta site). Each student **must print a copy** of this checklist and **bring it to lab** (copies will NOT be available in lab – you must bring your own!) During the lab you will check off the activities as you complete them, and you will show the completed checklist to your lab instructor at the end of the lab. Your lab instructor will double-check to be sure that you understood everything that was done in the lab, and will use this discussion and completed checklist to help determine your attendance points for that lab. Students should keep their checklists and use them as study guides in preparing for quizzes and practical exams.

Tests: There will be **three practical exams** during the quarter. The first will be in Lab 3, and will cover material from labs 1-2; the second will be in Lab 6, and will cover material from labs 4-5; the final practical will be in Week 10, and will cover material from labs 7-9. Practical exams will consist of ~25 stations of ~ 2 questions each consisting of slide identifications, human model or dissected organ identifications, lab procedures, materials, techniques, and questions related to the functions of identified structures, materials, etc. Specific information on the material which will be covered on each practical exam will be given in the lab – basically, things you **see** or **do** in lab and related functions are fair game for the practical exams.

PLEASE NOTE: It is **NOT POSSIBLE to schedule makeup practical exams after the fact**. If an unavoidable conflict (which you can document) arises and you cannot take the practical with your scheduled class, you **MUST** contact your instructor by the time/day of your class to *request permission* to take the practical during another scheduled time (be prepared to present documentation for your conflict.) You must complete the practical during the week scheduled for the practical – materials are removed and put away after the last practical exam of the week because regular lab will be held on the following day. *No makeups will be possible after the last day of the practical!! See the important note in Attendance about the lab schedule!*

Quizzes: There will be **five lab quizzes**, given on the dates noted on the syllabus. Each quiz will cover the previous week's lab as well as the lab to be completed that day, and will be worth 7 points. Quizzes will generally be given using PowerPoint, or may involve simple identifications of slides, models, etc. from the previous week's lab. Generally, you should review/study the terms, concepts, and results of the previous week's lab and carefully read the upcoming lab, to prepare for each quiz. Quizzes will be given during five labs this quarter, but one quiz will be an extra one that can be used if a student has to miss a lab (or it will count as extra points if all five quizzes are taken.) *You will NOT be allowed to make up a quiz if you are late to lab or you miss lab. If you leave lab after the quiz without completing that day's scheduled lab activities, your quiz will not be counted.*

Please note: The attendance and testing policies for this lab are an attempt to encourage very active participation in the lab each week. Don't give in to the temptation to leave lab early --- use all the time available to you to carefully review the slides, models, etc. assigned for that lab. The weekly quizzes and frequent practicals are designed to encourage more regular studying and review of lab materials, as well as active participation in lab.

Grades:	3 Lab Practicals @ 50 pts	= 150 pts.
	4 Weekly Quizzes @ 5 pts.	= 20 pts.

	2 Physio-Ex Assignments @ 9 pts. = 18 pts.
	Attendance and participation = 12 pts. (6 labs @ 2 pts.)
	Total points from laboratory = 200 pts.

****Cheating^{##} on any quiz, test, or assignment will warrant an automatic grade of F ****

Academic integrity during laboratory practicals has been a particular concern. We will strictly enforce rules of no talking, touching microscope slides or specimens, or looking at the answer sheets of others during practicals. If any student is observed

(by a TA, proctor, or fellow student) during a lab practical touching any part of the microscope slide or stage, showing their answers to another student, or copying answers from another answer sheet,

that student's answer sheet will be immediately taken away and they will receive a 0 on the practical. (The only part of a microscope that may be touched during a practical is the fine adjustment knob.) *Any indication of academic dishonesty will be grounds for a grade of 0 on the activity.* The instructor reserves the right to assign a grade of F for the entire course if warranted.

^{##}Please read the Student Code of Conduct for a discussion of what constitutes cheating and academic dishonesty.

NOTE: Your final grade for the whole course, Anatomy and Physiology I, will be based on ~400 potential points from A&P lecture, and 200 potential points from A&P lab. Final grade scale for the course is located on the lecture syllabus.

Laboratory Reviews/Quizzes: You should completely fill in the answers to all portions of the laboratory review for each exercise covered in lab each week. Answers will be posted on Blackboard so you can check your answers. You should also answer questions, draw pictures, etc. as directed in each lab exercise. **Quiz questions** may come from these **lab review sheets** as well as what you were supposed to **DO and SEE** in each lab. You may discuss answers to the review questions with your classmates, but you won't learn nearly as much if you just copy answers from a classmate or the posted answer keys. Use these lab reviews as a way to help you prepare for the quiz covering that lab!

Anatomy & Physiology Open Lab: 6201 French-West will be the site of review/study sessions on a weekly basis, staffed by the lab instructors. Additional hours will usually be held before each practical exam. Specific days/times will be posted on Blackboard. This will provide an opportunity for you to review and study material in more depth as you prepare for the practical exams. **Take advantage of this!**

Miscellaneous Notes:

*Your lab manual is organized with plenty of space in it for you to record data, answer questions, and draw pictures. Take advantage of this to write down everything you **see** and **do** in lab! You will need this detailed information to help you study for the practicals and quizzes. Make detailed notes about the appearance of microscope slides, especially – anything that will help you remember what a slide looks like will be helpful!

* All standard safety rules will be followed in this lab. These rules are listed in a separate handout that you will be asked to read and sign if you agree to abide by them. If you don't, or you are not found to be in compliance during labs, you will be withdrawn from the entire course.

* We will be examining pre-dissected animals in lab this quarter. You are asked to

be respectful of the animals used for this purpose. You are expected to follow safe and appropriate laboratory techniques at all times. It is suggested that you wear old clothes to labs where dissections will occur, and during these labs we will strictly enforce the restriction against open shoes. We also suggest anyone with long hair be prepared to restrain it in some way.

*Remember that the lab is meant to supplement the lecture material, and give you hands-on experience with laboratory techniques. There are many critical components of basic body anatomy that *you will only cover in lab* - for example, examination of body tissues and detailed names/locations/functions of bones and muscles. There may occasionally be questions on lecture tests which require you to relate something you saw or did in lab to material covered in lecture. You get one grade for this course, so lecture and lab material is fully integrated. While the lab may seem like a lot of work to you, please realize that the work is designed to help you focus on what is most important for you to learn. **Lecture is specifically designed with few required assignments to balance out the workload for the two components of the course.**

**** Cell phones and earphones must be put away during all laboratories.***

No text messaging or phone calls at any time during class, please! Students who do not follow these guidelines will be asked to leave lab, and will be counted as absent for that lab.

Course Objectives:

1. Learn to make careful observations of models, specimens, slides, and laboratory procedures, and how to record those observations in an accurate, neat and orderly fashion.
2. Understand the operation of a microscope, and know its parts and magnifications.
3. Be able to identify the major parts of a cell and know their functions in detail. Understand the mechanisms by which chemicals move across cell membranes.
4. Understand what occurs during the major stages of mitosis and meiosis, and recognize the stages in cell models or slides.
5. Describe the basic concepts of genetics/heredity and perform simple genetic crosses.
6. Recognize/distinguish between the major types of human body tissues, and describe their functions.
7. Understand the structures and functions of the major human organ systems. This quarter the integumentary, muscular and skeletal systems will be covered in detail. You will learn the locations of all major muscles and bones in the human, and how they work together to achieve movement. You will also explore the cellular structure of skin, bone, and muscles, and how muscle contraction is accomplished.