

ZOOL 2235 PHYSIOLOGY FALL 2013

Dr. Jennifer Cooper
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Include ZOOL 2235 in the subject line of all emails.

COURSE DESCRIPTION

ZOOL 2235 is a course intended primarily for Kinesiology students; it will not fulfill requirements for a nursing major. This course will examine human physiology, the science of functional mechanisms of living organisms and their parts (cells, tissues, organs and systems). Human physiology therefore involves the study of the functions of the human body. Lecture materials emphasize physiology at the cellular and organ system level including digestion, respiration, circulation, excretion, muscle and movement.

There is a substantial amount of information to be mastered in this course. To do well, one must devote the necessary time and effort. Experience indicates that to be successful, a minimum of 15 hours of preparation and/or review are needed outside of class every week. **If you are not prepared to dedicate the time and effort needed for this course, you should reconsider your enrollment.**

REQUIRED TEXTS/MATERIALS

- *Fundamentals of Anatomy & Physiology* by Martini, et al. 9TH edition. Pearson, ISBN: 9780321719799
- Mastering A&P access (bundled with text at bookstore...otherwise purchase access online)
- **Iclicker2** remote

CENSUS DATE

This course cannot be taken for credit. It can only be taken for a letter grade. Students can only drop this course prior to the census date of September 19.

GRADING

Grades are determined by the points you earn during the course. Your grade will be determined by your combined performance in lecture and lab. I reserve the right to use +/- grades, rather than whole letter grades. A total of 1000 points are available. It is expected that students will keep track of their scores (including copies of all graded materials) for the duration of the term. Because of potential privacy issues, scores and/or grades will not be given out *via* e-mail, phone or on the course website. I will post a copy of the syllabus and other course materials on Blackboard.

Lecture exam 1	100 points
Lecture exam 2	100 points
Lecture final exam (cumulative)	150 points
Lab write-ups (5 graded, 30 points each)	150 points
Lab quizzes (5 total)	50 points
Mastering A&P online homework (average of 13 points each assignment)	200 points
Iclicker participation in lecture	125 points
Study group activities:	
Bi-weekly online chat study sessions, 25 points each graded session	125 points

LECTURE EXAMS

The lecture exams will be given in a multiple choice format. Although they will focus on material covered in lecture and will not include specific questions from lab exercises, concepts presented in lab will be covered in exams. The final exam is cumulative; that means that it will include material covered in the previous exams. I do not recycle exam questions.

Students who arrive after the first exam of the day has been turned in will not be allowed to take the exam. If you must leave the room for personal reasons, you will not be allowed to finish the in-class exam. Your partially finished exam will be graded as it stands. If you miss an exam for any reason, you must take an alternate exam before the in-class exam is scheduled to take place. If you miss an exam unexpectedly, and do not have documentation of a legitimate reason for doing so, you will not be allowed to take the alternate exam, and your total exam points will be based on the average of your other in-class exams.

Exam answers will be recorded on Scantron 882-E forms. Erase thoroughly...**if the machine reads your erased answer as incorrect, the automatic score is the grade I record.** When you turn in your exam, you may be required to show photo identification.

MASTERING A&P

There will be online homework assignments due each week. Assignments are usually posted several days in advance, timed to coincide with the material being covered in lecture. You are responsible for checking the site for new assignments, and the due date for each. Assignments usually take 3-4 hours to finish, but each answer is submitted individually so you can do assignments in chunks. **Start assignments as early as possible, because a computer or website malfunction that prevents you from finishing an assignment by the deadline will result in a zero grade for the unfinished portion.** Students who register after the first homework assignments are due may **not** make up any missed assignments.

“Adaptive Follow Up” modules are short assignments following each homework assignment (due a week later), designed by MAP to address your personal areas of misunderstanding. You can earn up to 3 extra credit points for each module completed.

To register for the Mastering A&P visit the website <http://www.masteringaandp.com/>

Click the “STUDENTS” button under the register option. You will be asked for a student access code. This is a printed code supplied inside the Mastering A&P Student Access Kit, which was included with the purchase of your new textbook. If you bought your textbook used, then there is an option for you to purchase an access code online during the registration process at a cost of ~ \$50, cheaper than the campus bookstore (note: you do NOT need to buy access to Virtual Labs). If you prefer to purchase an electronic textbook, this option is also made available to you during the registration process.

In Mastering A&P, the name of this course is CSUSTAN ZOOL 2235 FALL 2013 Cooper. To register for this course, enter the code MAPCOOPER55390.

STUDY GROUPS

You will be randomly assigned to a study group at the beginning of the semester. Study groups will consist of 3 students. You will work very closely with your study group members throughout the semester... you will sit as a group in lecture, you will perform all laboratory experiments and write-up your results together, and you will participate in online chat study sessions twice a week. Part of your grade is dependent on your teamwork, **thus every group member must do their share of the work!**

ONLINE CHAT STUDY SESSIONS

Study groups will use the online tool **COLLABORATE** to meet twice weekly for study sessions. These study sessions will last 2 hours each. It is up to each study group to organize their schedules so that they may participate. A total of 11 chat sessions are possible over the summer semester. I will randomly grade 5 of these sessions (25 points each), assessing the performance of the group as a whole. To earn full points, each group member must **actively participate** for the full 2 hours. “Active participation” means focusing on physiology the entire session, and frequently contributing to the chat by directing the discussion, quizzing group members, answering questions, or asking for clarification of a concept. Groups will be downgraded if they: 1) waste time gossiping or making

irrelevant comments; 2) waste time transitioning between tasks. If you happen to miss participating in a graded session I will not downgrade your group, but **you** will not be able to make it up and **you** will receive zero points for that session. I will not announce grading bouts.

Study groups will be assigned their own chatroom with a unique URL. In your first lab period you will be given a live tutorial on using **COLLABORATE**.

i>CLICKER2

Questions and quizzes will be given during lecture using the i>Clicker2 system. i>Clicker2 is a response system that allows you to respond to questions posed during class. We will start using this system by Thursday June 13, and to receive credit for your responses you must register the i>Clicker2 at <http://www.iclicker.com> by the final exam week. When you register your i>Clicker2, use the name *exactly* shown on your university identification card and the serial number on the back of your i>Clicker2 unit. **If you forget to bring your remote to class, or if the remote malfunctions, then you will not receive credit for responses that day.** Questions may come from current or previous material and may include multiple choice, true/false, or fill in the blank.

ATTENDANCE AND PARTICIPATION

Regular attendance is vital to your success in this course. Therefore, I will be taking roll at the beginning of class every single day. **Each absence is worth 5 points, and each tardy arrival is worth 2 points.** These points are deducted from your semester total. The only excused absences are personal (or immediate family) medical issues, court dates, and military service, and documentation must be presented (physician's note, jury duty slip, etc). Students who are physically present, but inattentive (such as sleeping) will be marked absent.

Turn off your cell phones when you arrive each day, and **do not text in class. It is rude. If I see a student using their cell phone to text (or check email, or whatever) in class, it is an automatic 5 point deduction from your semester total.** Use of laptops to take notes is forbidden; take notes by hand. I will not be making PowerPoint lectures available for student download. You are responsible for taking notes during lecture.

PERSONAL INTEGRITY

It is assumed that you have read and understand the university's position on academic integrity and student discipline. Students are expected to conduct themselves responsibly and will treat instructors, their fellow students, the facilities, and course materials with courtesy and respect. Inappropriate behavior (including, but not limited to, cheating and/or plagiarism) will be dealt with as severely as university and state regulations allow.

COURSE OBJECTIVES

Students who successfully complete this course will:

- Describe the topics studied in physiology and explain the importance of physiology in modern medicine.
- Examine the scientific method as it relates to evaluating evidence and drawing logical conclusions.
- Examine fundamental physiological principles and the progression of structural levels of organization.
- Investigate the chemical basis of life with emphasis on structure and function of macromolecules.
- Describe the mechanisms of dehydration synthesis and hydrolysis reactions and their significance.
- Examine the tissue level of organization and interpret the role of tissues in human systems.
- Define homeostasis and negative and positive feedback loops, and explain how these concepts are used in physiology and medicine.
- Distinguish between intrinsic and extrinsic regulation and the roles of nervous and endocrine systems.
- Examine and describe the major features and functions of the cardiovascular, respiratory, muscular, digestive, immune, reproductive, and renal systems and their contributions to homeostasis.

STUDY RECIPE (FOR STUDYING ALONE)

This course has a reputation for being challenging. Students often complain that they study “all the time” but that their hard work doesn’t pay off in good grades. This is often because their study strategy simply needs tweaking. I have developed the perfect recipe for studying, based on our current understanding of the neurophysiology of learning and long-term memory formation. Using the recipe I provide below, you will maximize the benefit gained from each single minute of study time. If you also study the number of hours I recommend (15 hours outside of class, not including lab or homework assignments) you will enhance your chances of earning the grade you want.

For each day’s lecture notes, you should do 4 “drive-bys” of the information. Don’t read entire textbook chapters... that is a waste of time. Only use your textbook the way I have described below. Your study environment should be isolated from external noise and distraction (no TV, no music, no kids, no throwing the ball for your dog).

- 1. Take detailed notes in lecture.** Indicate with a special mark each time I move on to a new PowerPoint slide. Don’t try to write every single word on the slide; instead, **listen to what I am saying** and write abbreviated summaries and main ideas based on what comes out of my mouth.
- 2. DRIVE-BY 1 (LEARNING):** This study session is for **learning and understanding** the material I introduced in lecture.
 - This study session should be accomplished the same day as the lecture (ie. don’t have a sleeping period in between the lecture and the study session).
 - It should last a minimum of 1 hour, but will probably take 2-3 hours.
 - In the first 15 minutes, read through the notes and remind yourself of the general topic.
 - The remaining time should be spent in carefully reviewing each slide in turn, with your textbook open to the pages covering that material.
 - Read about every concept in the notes, and then read about it in the textbook.
 - Think about the examples provided, and see if you can think of other examples.
 - Try to draw relevant anatomical structures. Define terms in your own words.
 - Don’t stop until you have completed processing every slide of that day’s lecture notes.
- 3. DRIVE-BY 2 (CONSOLIDATION):** This study session is for **consolidating your understanding** of the lecture material, and forming a clear connection in your mind between concepts, processes, and structures.
 - This study session should be accomplished the day following the lecture.
 - It should last a minimum of 1 hour. You will not use your textbook for this session, except to clarify your understanding of a particular fact.
 - In the first 15 minutes, review each slide and remind yourself of what you learned the day before.
 - Return to your notes on slide 1, cover with a sheet of paper, and write down what you can remember (definitions, concepts, drawings). You must **write and draw** as much as you can possibly squeeze out of your memory. Don’t cheat by glancing at the notes! This process is called **“active challenging”** and it quite literally builds a neural and biochemical pathway in your brain. We use this process when we form long-term memories. The action of drawing and writing (not typing) seems to amplify the effect.
 - Uncover your notes and compare them with your memory work. Use a colored highlighter to highlight any mistakes or misunderstandings. Then move on to the next slide.
 - Don’t stop until you have actively challenged yourself on every slide of that day’s lecture notes.
- 4. DRIVE-BY 3 (LONG-TERM MEMORY FORMATION):** This study session is for **building the long-term memory** of the lecture material.
 - This study session should be accomplished the day following drive-by 2. Repeat every step described for drive-by 2, paying careful attention to the mistakes highlighted in that study session. Highlight new mistakes with a different color.
- 5. DRIVE-BY 4 (LONG-TERM MEMORY RETRIEVAL):** This study session is for **reinforcing the long-term memory** of the lecture material. **LONG-TERM MEMORY RETRIEVAL IS THE ACTION PERFORMED DURING EXAMS.**
 - This study session should be accomplished the day following drive-by 3. Repeat every step described for drive-by 3, paying careful attention to the mistakes highlighted in that study session. Highlight new mistakes with a different color. The more often you repeat this session, the more you reinforce the neural pathway for retrieving the long-term memory of each fact.

Week	Lecture	Lab
8/19-8/23	Ch 2: The Chemical Level of Organization	Study group assignment Collaborate tutorial
8/26-8/30	Ch. 2: Enzymes and Energy	Hypotheses & Predictions
9/2-9/6	NO CLASS Sept. 2 Labor Day Ch 3: Cell structure, Transport, Cell Cycle	Membrane Transport Handout PhysioEx 1 (1-5) Cell Transport
9/9-9/13	Ch 3 cont. Ch 12: Neural Tissue and the Action Potential	BioPac 11 Reaction Time
9/16-9/20	EXAM 1 Wednesday Sept. 18 CENSUS DATE Sept. 19 Ch 13, 14: CNS: Brain & Spinal Cord (plus PNS)	Video: The Brain PhysioEx 3 (1-9) Neurophysiology
9/23-9/27	Ch 16: The Autonomic Nervous System Ch 22: Physiology of Immunity	Immunity Video Infectious Disease Ex. Handout
9/30-10/4	Ch 19: Blood and the Clotting Reaction Ch 18: The Endocrine System	PhysioEx 11 (1, 3, 4, 5) Blood
10/7-10/11	Ch 6: Osseous Tissue and Bone Remodeling	PhysioEx 4 (1-4) Endocrine
10/14-10/18	Ch 10: Muscle Tissue and Contraction	BioPac 1, 2 Electromyography
10/21-10/25	EXAM 2 Wednesday Oct. 23 Ch 20 and 21: Cardiovascular Physiology	BioPac 7 Electrocardiography PhysioEx 6 (1, 2, 3, 5, 6, 8) Cardio
10/28-11/1	Ch 23: Respiratory Physiology	BioPac 12, 13 Pulmonary Capacity
11/4-11/8	Ch 26: Urinary Physiology	Acid-Base Handout
11/11-11/15	NO CLASS Nov. 11 Veteran's Day Ch. 26 cont.	Renal Physiology Lab Handout
11/18-11/22	Ch 24: Digestive Physiology	PhysioEx 8 (4) Fat Digestion Digestion Handout (Protein, Carb)
11/25-11/29	Ch. 24 cont. NO CLASS Nov. 28-29 Thanksgiving Holiday	NO LABS
12/2-12/6	Ch 25: Regulation of Metabolism Ch 28: Reproductive Physiology	Glucose Metabolism Handout
12/9---	Ch 28 cont.	NO LABS
12/18	FINAL EXAM in classroom 11:15 a.m.-1:15 p.m	NO LABS Glucose lab due in final exam

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
AM 5:00							
6:00							
7:00							
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