

ZOOLOGY 203 (Human Physiology), Summer 2017
Course #50382 (Lecture), 50383(Lab)

Instructor: Richard Albistegui-DuBois

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Lecture: Monday & Wednesday 9:00-10:05 am, Room NS-243
Tuesday & Thursday 9:00-9:50 am, Room NS-243

Lab: Monday & Wednesday 10:15-1:50 pm, Room NS-243
Tuesday & Thursday 10:00-1:35 pm, Room NS-243

Office Hours: M-Th after class until 3:00, also by appointment

Note: We will usually continue lecture into the first part of the lab session. You should plan to be in class for the entire combined lecture/lab period.

Recommended texts: Human Physiology: An Integrated Approach, 6th edition. Silverthorn.
The 4th, or 5th editions are also acceptable.

ISBN: 5th edition (without CD): 9780-321-625847
5th edition (with CD and access code): 9780-321-559395
6th edition (without CD): 9780-321-750075
6th edition (with CD and access code): 9780-321-750006

Also recommended: Anatomy and Physiology, from OpenStax.

ISBN: 9781-938-168130

This is a free textbook. You can download a PDF copy from their website

(<https://openstax.org/details/books/anatomy-and-physiology>) for free, or pay some money for an ebook version (\$7 at the iTunes bookstore) or print copy (\$52 from Amazon).

Optional textbook: What You Really Need to Know..., 1st edition, Williams

ISBN: 9780-692-481929

Human Physiology Coloring Book, 2nd edition, Kapit, Macey and Meisami

ISBN: 9780-321-036636

Prerequisite Courses: In order to enroll in this course, you must have taken either:

1. Introductory college-level biology and chemistry, both with labs, or
2. Human Anatomy (ZOO 200).

NOTE: The first option will give you much better preparation for the biology and chemistry involved in physiology, and is **strongly** recommended. If you have not taken college-level biology, I strongly recommend The Williams optional textbook above, and suggest you come talk to me early in the class.

Course Website: go to <https://palomar.instructure.com>. Once logged in, you should be able to find the class website. There will be a lot of useful information posted here, so be sure to sign up and check often—preferably daily.

Lecture Podcast: You can listen to recordings of the lecture by downloading my recordings. Please note: I do not guarantee that these will be available, so do not rely on them as a substitute for attending the class!

On a desktop or laptop computer: In iTunes, under the File menu, go to Subscribe to Podcast... and enter this URL: <http://www2.palomar.edu/pages/radubois/category/podcasts/zoo203mw-lec/feed/>

On an iPhone or iPod: go to the Podcasts app, and add a podcast. You should get the option to add by URL. Enter the address listed above.

- I recommend setting "Download Episodes" to On and "Delete Played Episodes" to Off (you can adjust these using the gear icon next to the podcast name). You want it to download the podcasts to your computer, rather than trying to stream them. Look to the right of each episode; if there is a cloud icon next to it, it is **not** downloaded, and will not play correctly. Click the cloud icon to download it.

You can also download individual lecture recordings by directing your web browser to <http://www2.palomar.edu/pages/radubois/category/podcasts/zoo203mw-lec> and **right-clicking** on the link to the recording you want. **Do not** try and play the recording by simply clicking on the link in your browser; it will play for 5-10 minutes, then reset to the beginning.

Lecture Video: Most lectures have a timelapse video of the whiteboards, should you need help remembering what was being drawn or written. You can access the videos at <http://www2.palomar.edu/pages/radubois/category/videos/zoo203mw-vid>. You should be able to download the video by right-clicking on the link provided.

Student Learning Outcomes: SLOs are meant to represent the general skills or masteries a successful student should possess after completing the course. Instructors decide on what these should be, and periodically assess how well students are achieving them. This is a way for the instructors to evaluate themselves, and is not directly part of how you are graded. There are two overarching outcomes which this class is intended to produce.

1. Content knowledge. Students will demonstrate thorough knowledge of the functioning of multiple organ systems in performing body functions, with special attention paid to the maintenance of homeostasis.
2. Scientific method. Students will demonstrate understanding of the principles of experimental design and analysis, including the nature of hypotheses, independent, dependent, and control variables, experimental design, and analysis including basic hypothesis testing.

Specific Objectives: These are the specific content areas you should master as part of taking this course. After completing (and passing!) this course, you should be able to:

- Demonstrate knowledge of the organs and processes involved in the normal functioning of the nervous, endocrine, reproductive, muscular, cardiovascular, respiratory, urinary, and digestive systems.
- Identify the likely site and nature of disorders in these systems based on presentation of generalized signs and symptoms.

- Describe the interactions between these systems in maintaining homeostasis, both in general and in specific scenarios such as exercise, dehydration, electrolyte imbalance, blood loss, poor respiratory function, acid-base disturbance, and others.
- Read and interpret charts and graphs
- Assess whether the difference in means between two data sets is statistically significant via a t-test
- Form a hypothesis and design an experiment to test that hypothesis

ATTENDANCE POLICY: Summer classes move very quickly, and missing classes is almost always a bad idea. If you miss a class in the first week, I will drop you from the class to allow a waiting student to enroll. If you miss more than three class sessions over the course as a whole, you may be dropped. Other than that, I do not have a formal attendance policy, as I feel that you are the best judge of where attending class falls on your priority list. However, keep in mind that you are responsible for all material presented in the course, whether you were there to hear it or not. Learning material presented during your absence is your responsibility. Keep in mind that quizzes and take-home labs cannot be completed after their due date.

The department has asked that I include the text below:

Only students who are officially registered may participate in this class. If you are given a permission code to add this class, you must officially add the class prior to the next class meeting. If you have difficulty using the colleges computerized enrollment system to add, please notify the instructor immediately. The deadline for adding any class or using a permission code to add is the end of the second week of classes. **Under no circumstance will students be allowed to add this class after the add deadline**

TARDY POLICY: If you come to class after it begins, please enter quietly and take a seat with a minimum of disruption. You are responsible for making sure that you have any materials or information which you have missed.

On exam days, you will not be allowed to start the exam if you are more than fifteen minutes late to class or after the first student finishes the exam, whichever comes first.

LATE PAPERS/ASSIGNMENTS: Assignments will not usually be accepted late, unless arrangements have been made in advance. If they are accepted (at instructor discretion), they will typically receive half credit. All due dates are indicated on the class schedule.

CELL PHONES/BEEPERS/ETC.: All communications devices such as cell phones, pagers, wireless-enabled PDAs, and such should be turned off or silenced while in the lecture room or laboratory. Anyone using a phone, instant messaging, or any such activity during class time will be asked to leave the class, and will be considered to have been absent without excuse during that class session. If you believe that your circumstances warrant an exception to this policy, talk to me before class.

ASSIGNMENT PARAMETERS: Many of the written assignments in this class allow more than one person to contribute to an assignment (i.e. the assignment can have more than one name on it). Please pay close attention to how many are allowed to participate; if that number is exceeded, everyone whose name is on the assignment will be penalized.

PLAGIARISM AND ACADEMIC DISHONESTY: In this class, the two most common temptations are cheating on exams and plagiarism.

Exam cheating probably doesn't need to be explained. If you use unauthorized aids during an exam, or are looking at another student's exam, you are cheating. If you are caught cheating, you will receive a

zero score on that exam. Note that given the rest of my exam policies (see below), this might result in failing the course.

Plagiarism is submitting another person's work as your own. This could involve copying someone else's answers on an assignment, copying text from another source without proper citation, or using someone else's graph in a lab report (among other things). An assignment with plagiarized materials will receive a zero score. If assignments are turned in and it is evident that graphs or text have been shared, all of the assignments with identical graphs will receive zero scores for that assignment.

More than one incident of plagiarism or exam cheating will result in the student receiving an automatic grade of "F" in the course regardless of any other work, and may result in the student being referred to the Student Affairs Office.

TESTS AND GRADING:

The good news is that your grade in the class is based solely on your mastery of the material and concepts as demonstrated by your performance on the exams and assignments. Your grade is not a judgment of you as a person, nor a reflection of how anyone esteems you. This isn't personal.

The bad news is that your grade in the class is based solely on your performance on the exams and assignments. There are no extra credit projects, no points for good attendance, and no credit for hard work. A passing grade in this course is earned **only** by demonstrating that you have mastered the course material to at least a minimum standard. Events in your life, other classes, bad hair days, romantic troubles—none of these can or should be taken into account when grades are assigned. Regular attendance and diligent effort are part of the *basic requirements* in a college course, and are not grounds for a better grade.

The question everyone asks, of course, is this: How do I get an A in this course? And my answer is this: *by doing A-level work in every content area*. I would love to give everyone an A; show me that you deserve it.

EXAMS: I use a somewhat unusual exam format, intended to help you **master** the material by the end of the course. You will have exams in eight sessions during the course.

- At each exam session there will be a written exam. This exam is a 50-point exam on the material you just finished.
- At most sessions, you may also retake new version of two written exams from a previous area.

TO PASS THE CLASS: To receive a passing grade in this class, a student must demonstrate mastery of **the first six** content areas (core concepts through respiratory system). Here is the rule:

- If you end the class with less than 60% on **any of the first six** 50-point exams, you will receive a grade of "F" **regardless of overall points**.

- Each exam (except the last two) may be retaken twice (so a total of three attempts). The seventh exam can be retaken once. The eighth exam, since it is on the last day of class, cannot be retaken.
- A missed exam **counts as your first attempt, on which you receive a zero**.
- At the end of the course, your score in each area will be the **highest** of all written exam attempts in that area.

EXAM POLICIES

1. You should be in the room on time for exams. Students arriving more than fifteen minutes after the exam session begins will not be allowed to take any exams.
2. If you're not sure about what a question is asking, or if anything is not clear to you, please ask. Questions during the exam are just fine.
3. You may step out of the room between exams to use the bathroom, but not to study. If you are gone for more than a couple of minutes, you will not be allowed to take any more exams.
4. Please make sure you have everything you will need (i.e. extra erasers, pencils, etc.) before the exam starts. Don't go digging through your stuff during the exam.
5. The answer on the scantron is your official answer. If you have something different marked in the exam itself, that doesn't count. For essays, please make your intended answer very clear.

Bring a calculator to all exams. Cell phones are *not* acceptable as calculators, and you may not share calculators--you can get a basic four-function calculator (all you will need) for less than \$5.

MAKEUP EXAMS: Makeup exams will **not** be given. If you miss an exam for any reason (including illness, car accidents, or whatever), that counts as an attempt with a zero score.

QUIZZES: About eight (possibly a few more or less) 5-point quizzes will be given during the course.

These will total about 40 points. Makeup quizzes will not be given, but at the end of the term, I will drop your lowest quiz score and replace it with the average of the others.

CHALLENGE QUESTIONS: Each of the eight units will have a set of take-home problems for each student to complete. These are intended to be challenging and thought-provoking. You may work on them with other students, but I recommend doing your best to solve them on your own. These are not worth points, but you are strongly encouraged to solve them and discuss them with me before the relevant exam.

LAB: Short lab assignments may be given during lab sessions to test your understanding of the procedures and results involved in each lab. These will be worth a total of about 50 points, and cannot be made up (but I will drop the lowest score and replace it with the average of the remainder). In addition, there are four at-home lab assignments during the course, meant to test your ability to think about and analyze scientific data. These are worth 15 points each, and cannot be made up.

LAB EXAM: There will be one 25-point lab exam on the topics covered in the at-home lab assignments.

CHART EXAM: There will be a 25-point exam on your ability to use the lab software.

EXTRA CREDIT: There isn't any.

COURSE GRADE: This course will not be graded on a curve. Your final grade will be computed using your highest long exam grade for each content area, plus your points from lab assignments, quizzes, and the Chart exam.

Points available are:

400	Eight 50-point long content area exams
60	At-home lab assignments
50	In-lab assignments
40	Lecture quizzes
25	Chart exam
25	Lab exam
600	Total points available

The letter grade will be determined by the resulting score as follows:

Percentage	Letter grade
90.0-100.0	A
80.0-89.9	B
70.0-79.9	C
60.0-69.9	D
<60.0	F

REGRADE REQUESTS: If you feel that your test was improperly graded, please explain exactly why you feel that your grade is incorrect and return the test to me. I reserve the right to review the entire exam, not just the questions you indicate, but I will not use extra-harsh criteria.

ADDITIONAL INFORMATION:

Academic Integrity: Maintaining integrity in your academic and professional life is one of the basic requirements of being an adult. In this course (and in every other academic and professional activity), honest behavior is expected. In terms of these courses, academic integrity includes properly documenting and citing references, submitting only your own work under your name, and avoiding cheating on assignments and tests. If you have a question about whether something would constitute dishonest behavior, consult with me beforehand. You can also consult the college catalog, pages 27 and 30-34, for more information on this issue.

Plagiarism: Plagiarism is the submission of another person's ideas or work as your own. In a course where you are working in groups, this can be a difficult area to clearly define. Your instructor will explain the expectations for how your work should be accomplished and submitted. Please discuss any uncertainty with your instructor.

Learning Disabilities: I will make every effort to provide reasonable accommodations in lecture, lab, and testing for students with documented learning disabilities. If this applies to you, please consult with me as soon as possible so that we can work out what arrangements are necessary.

Estimated costs for the course: You will be responsible for purchasing one of the required textbooks and for printing out copies of the lab protocols. The lab material can be found on the course website. The total number of pages to be printed is approximately 140, which (assuming approximately \$0.05 per page cost of inkjet printing) has a total cost of \$7. These costs can be reduced by coordination among members of a lab group, since most labs require only one copy of the lab protocol per group of four people.

How do I study for this course?

This is an interesting question. There are several ways in which this course differs from many others which you have probably taken.

1. Memorizing is not enough! Unlike anatomy, which involves a great deal of memorization of lists of muscles, bones, and other structures, this class involves very little memorization. Study techniques such as flash cards and reading the book to memorize phrases and terms will not be enough to pass the tests.
2. Your goal is thorough understanding. The body functions as an integrated system; every structure has multiple functions, each affecting many other structures. In the end, you want to have an understanding which is like a mental model of the body—one which you can turn around and see from different angles. That takes a lot of time, so don't delay.
3. When studying, aim for precise understanding. Avoid explaining things using pronouns like "it" and "they"; use the most precise terminology you can manage. Don't say "It reabsorbs most of the ions", say "The proximal convoluted tubule reabsorbs about 60% of sodium which filters out at the glomerulus". Don't leave any doubt as to whether you know the facts.
4. Rewrite the notes *in your own words while listening to the recordings*. Make concept maps. Remake the drawings. Make your own drawings. Make models out of cardboard tubes and pipe cleaners (one very successful past student actually did this). Do whatever you need to do to make the knowledge your own. **Don't** just read the book over and over.
5. There is no teacher like teaching. You can study in many ways—reading, rewriting notes from class, listening to lectures. From what I have seen, though, there are a few techniques which are the most effective.
 - Ask questions! When you are confused or don't understand, ask me or a fellow student. Don't just give up!
 - **Come to office hours!** Office hours are a great place to ask questions, because you get to talk to me one-on-one, and I can most easily determine how to help.
 - Teach someone else. There is no greater test of your comprehension than whether you can explain the topic to someone else. Explain course material to each other. Explain it to your parents. Explain it to your significant others. Explain it to random people on the street. Doing so will test your knowledge and show you where your understanding is insufficient.

About your instructor:

This is my eleventh year of full-time teaching at Palomar College. I received a bachelor's degree in marine biology from UC Santa Cruz, and a doctorate in neuroscience from UCLA. My own research work was in neuroimaging of human brain function, particularly of adaptation to distorted vision. However, I love teaching students more than I loved research, and am very happy to devote my full attention to doing the best job I can of teaching.

When I'm not teaching, I enjoy homeschooling my two kids along with my wife, building things (with Legos or power tools), and reading and watching science fiction and fantasy. When I can, I also like archery, Japanese gardening, and making mosaics, but I'm having more trouble finding the time for those things these days.

The last name is a combination of my last name (DuBois) and my wife's last name (Albistegui) before marriage. It's French and Basque, and pronounced "al-BIS-teh-gee doo-BWAH", with a hard "g" in the last syllable of the first name. Just call me Richard, or "Doctor Rad".