

HUMAN PHYSIOLOGY
Anat 240

Spring 2024
Dr. Jake Sapiro

TENTATIVE SCHEDULE

| | LECTURE | LAB |
|--------------------|--|--|
| Jan. 29 Feb. 1 | Introduction, Homeostasis Chemistry Concepts for Physiology | Scientific Method Diffusion |
| Feb. 6 Feb. 8 | Biological Chemistry Enzymes | Surface Area/Volume Enzymes |
| Feb. 13 Feb. 15 | Membranes, Membrane Transport/ Quiz Cell structure, Protein Synthesis | Osmosis Membranes |
| Feb. 20 Feb. 22 | Regulation of Cell Division/Cancer Exam I (through protein synthesis) | Review |
| Feb. 27 Feb. 29 | Cellular Metabolism Cellular Metabolism | Mitosis/Meiosis Genetics |
| Mar. 5 Mar. 7 | Neural Signaling (Action Potentials) Neural Signaling (Synapses and Synaptic Integration) | Fitness Reflexes |
| Mar. 12 Mar. 14 | Sensory Physiology Central Nervous System | Senses (cutaneous) Senses (visual) |
| Mar. 19 Mar. 21 | Peripheral Nervous System/Neurotransmitters Exam II (Through CNS) | Review |
| Mar. 26, 28 | No School (Spring Break) | |
| Apr. 2 Apr. 4 | Endocrine System/Signal Transduction Muscle Physiology | Senses (auditory/taste) Muscle physiology |
| Apr. 9 Apr. 11 | Cardiovascular Physiology (Heart) Cardiovascular Physiology (Circulation) | ECG Review |
| Apr. 16 Apr. 18 | Exam III (through Heart) Cardiovascular Physiology (Tissue Perfusion) | Blood Pressure |
| Apr. 23 Apr. 25 | No Class Respiratory Physiology | Respiratory function |
| Apr. 30 May 2 | Immunology Renal Physiology | Blood tests Review |
| May 7 May 9 | Exam IV (through immunology) Renal Physiology | Urinalysis |
| May 14 May 16 | Digestive Physiology / Regulation of Metabolism Reproductive Physiology | Nutrition Lab Book Due |
| May 21 May 23 | Review FINAL EXAM | |

Texts: **Human Physiology** by Fox (12th edition or newer) Do not rent the book. Do not get the on-line version of the book. You can buy an inexpensive used copy on line.

Human Physiology Laboratory Manual by Sapiro, J. (Available on my website. Please print it out and have it with you for each class meeting. Printing facilities are available at the library.)

Website: <http://anatandmore.us/jas/physiol.html>

COVID-19 Procedures

Everyone in the class is expected to be vaccinated.

The following protocols should be followed in case of any communicable disease, not just COVID-19:

If you feel ill, do not come to class.

If you have a body temperature of 38 C or greater, do not come to class.

If you have been exposed to someone who has tested positive for COVID-19, do not come to class until you have been tested and received a negative result.

COURSE OBJECTIVES

Instructional Objectives: Upon successful completion of Human Physiology, the student will be able to:

1. Relate how homeostatic mechanisms respond to internal and external changes in the environment.
2. Describe the basic chemical-physical principles that underlie the functions of cells and tissues.
3. Examine the role of cellular energetics and protein synthesis in maintaining homeostasis.
4. Construct appropriate experimental designs and predict outcomes.
5. Relate the relationship between morphology and physiology.
6. Analyze data acquired in the laboratory.
7. Assess the function of the major organ systems in health and disease.

Student Learning Outcomes: Upon successful completion of Human Physiology, the student will be able to:

1. Compile and interpret data acquired in the laboratory.
2. Relate how homeostatic mechanisms respond to internal and external changes in the environment.
3. Compare and contrast normal physiological states and nonpathological variant states to pathophysiological conditions.

CLASS POLICIES

I. Participation Policy

Participation, not merely attendance is mandatory. Under Title 5 California Administrative Code, Section 58004: A student may be dropped if no longer participating in the course. "No longer participating includes but is not limited to excessive absences."

The following criteria define participation:

1. Arrive on time to class and stay the entire class period.
2. Bring all of the materials necessary for that class, for example books, paper, pens, etc.
3. Turn in all assignments on time and complete.
4. Actively do assigned lab work.
5. Contribute to group projects.
6. Follow all of the rules and safety regulations of the class.
7. Take all assigned quizzes and exams.

II. Attendance and Lateness Policy

You are expected to attend and participate in all lectures and labs. You may be dropped for excessive absences. If you miss a lecture, it is your responsibility to find out what we did in class and to keep up with the work. If you miss a lecture exam you will be allowed to take one make-up exam usually given during the last week of the semester. Be warned, make up exams may be harder than the regular exams. You may only take one make up exam per semester. If you miss a lab, you may not be able to make it up. If you miss three classes, you may be dropped from the course.

Arrive on time to class. Three latenesses count as an absence. If you miss more than 15 minutes of a lab, it counts as an absence. All assignments are to be turned in at the beginning of class on the date due. Late assignments will not be accepted.

III. Drop Policy

If you wish to drop the class, it is your responsibility to do so in a timely manner. If you have not dropped the course by the drop deadline you must receive a grade for the course. Grades of "Incomplete" will only be given to those students who are passing the course, but missed the end of the semester. If you are not participating as defined in section I., or have excessive absences, you may be dropped from the course.

If you choose to drop the course, understand that a "W" will appear on your transcript and that more than one or two "W's" will have a negative impact on your ability to get into a health-related program. Understand, however, that a "W" is better than an "F" on your transcript. If you get an "F" and repeat the course, the "F" is not counted in your GPA, but it remains on your transcript forever.

IV. Cheating Policy

If your behavior makes me suspect that you cheated in any way (as defined in the College catalog) you will get a 0 for the exam. A report will be submitted to the vice president for further action such as an F for the course and/or expulsion from the college. Cheating on an exam includes using any resource that is not specifically approved in advance. If, on an exam or lab report, you include a term or concept which we did not cover in class, you will be given an opportunity to demonstrate that you have that knowledge. If you can not, it is proof of cheating.

V. Breakage Policy

Many of the materials you will be handling in lab are fragile and expensive. If you are not careful and break or leave a permanent mark on something, this shows a careless disregard of the rules. You will lose up to 40 points off your final grade.

VI. Cell Phones

Turn off your cell phone or set them to vibrate before entering class. You may use your cell phone for taking pictures of the board or data collection, but note the copyright notice below.

VII. Copyright

All material provided to you and recordings you take in class are copyrighted by Dr. Sapiro. You may share your recordings of the lectures and materials laid out in the labs with other students currently enrolled in the class, but otherwise they may not be reproduced or distributed without the expressed permission of Dr. Sapiro. Class grades, exams, quizzes, etc. may never be shared.

VII. Student Behavior:

Students are expected to behave in a respectful and dignified manner while in the classroom and on campus. Any behavior or activity that disrupts another person's ability to learn or carry out their job will not be tolerated. Please refer to the student code of conduct in the Fullerton College catalog: <https://catalog.nocccd.edu/fullerton-college/college-policies-rules/standards-student-conduct-discipline-policy/>

VIII. Nondiscrimination Statement:

All students should be able to pursue their educational and career goals at Fullerton College free from discrimination. The college nondiscrimination statement can be found in the Fullerton College catalog - <https://catalog.nocccd.edu/fullerton-college/college-policies-rules/nondiscrimination-statement/>

IX. Accessibility:

Should you require accommodations for a documented disability, please contact Disability Support Services (<https://catalog.nocccd.edu/fullerton-college/support-programs-services/disability-support-services/>) for assistance. Every effort will be made to provide accommodations.

X. Safety:

Please take note of the safety features in and close to your classroom, the location of fire alarms and study the posted evacuation route. The most direct route of egress may not be the safest because of the existence of roofing tiles or other potentially hazardous conditions. Similarly, running out of the building can be dangerous during severe earthquakes. Do not use an elevator during an earthquake. During strong quakes the recommended response is to duck – cover- and hold until the shaking stops. Follow the guidance of your instructor. Your cooperation during emergencies can minimize the possibility of injury to yourself and to others.

Please review the signs in your classroom describing how to respond to an active shooter on campus. General safety instructions for the laboratory can be found in the Laboratory Manual and will be discussed during the first class session. Safety concerns that are specific to individual labs will be discussed and demonstrated prior to that lab session.

Please be aware of your surroundings when you are walking on campus, especially if your class is at night. Utilize the buddy system if possible. Contact Campus Safety for emergencies on campus: 714-992-7777, or dial 9911 from a campus phone or 911 from a cell phone.

XI. Grading Policy

You earn your grade; my job is merely to record it. This is a very straight-forward class. There are specific things for you to know, and either you know the material or you don't. You will be graded almost exclusively on your knowledge of the material as demonstrated by your performance on the exams and you showing proficiency and understanding of the laboratory exercises. Because this is a pre-professional class with very specific requirements, the opportunities for extra credit are very limited. There will be extra credit questions on lecture exams. In addition there will be some occasions in which I will award a few points for going beyond the scope of the class. Exams will be graded and returned to you promptly during the semester for you to review, and cumulative grades will be posted. It is your responsibility to go over the exams and grades to make sure there are no errors in scoring. Graded exams will be given to you to review, but I will keep them in my files.

TENTATIVE GRADING FORMULA:

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|------------------------------------|------------|---------------|
| Quiz | 15 points | |
| Lecture Exams I-IV (100 pts. each) | 400 points | A = 89 - 100% |
| Final Exam. | 120 points | B = 79 - 88% |
| Lab exercises | 120 points | C = 68 - 78% |
| Participation | 25 points | D = 55 - 67% |
| Total | 640 points | F = 0 - 54% |

(There may be other quizzes and assignments which would add to the point total.)

If you have any questions about the lecture or lab material or any of the assignments, please see me during office hours, during lab, after class, in my office or e-mail me. **It is to your credit to show that you are smart enough to ask for help when you need it.**

Dr. Sapiro's email: jsapiro@fullcoll.edu

Web site: <https://anatandmore.us/jas/physiol.html>

While I try to check my messages and respond in a timely manner, if it's important, see me personally.

Office hours: (Rm 427)

Tues. 5:00 - 5:30

Thurs. 5:00 - 5:30

I am also available in my office or on Zoom at other times by appointment.