

ZOOL 4280, PHYSIOLOGY OF HUMAN SYSTEMS

FALL 2017

Instructor:	Mark A. Grobner	Office Hours:	TR 10:00-11:00, W 2:00-3:00
Office:	N268		Or by appointment
Phone:	(209) 667-3268	Lecture Meeting Times:	MWF 1:00-1:50
E-Mail:	mgrobner@csustan.edu	Lecture location:	N229
Website:	Http://www.csustan.edu/grobner	Laboratory Meeting Times:	M 2:00-4:50
Corequisite:	ZOOL 4280 Lab	Laboratory Location:	N229

COURSE INFORMATION

University Course Catalog Description

Human Physiology presented at cellular and organ system levels: membrane transport, nerve excitation, muscle contraction, cardiovascular physiology, kidney function, hormone function, reproduction, and digestion.

Course Prerequisites/Requirements

Students must have completed BIOL 3310 and CHEM 3010/3012 or equivalent with grades of C- or higher. Students must also be enrolled in ZOOL 4280 lab.

Required Texts and Materials

Anatomy and Physiology is an open source book available to view online or download as a PDF here:

<https://openstax.org/details/books/anatomy-and-physiology>

You may also pick up a copy in the bookstore or order a hard copy online.

Publisher: OpenStax College; 1st edition (January 1, 2013)

ISBN-10: 1938168135

ISBN-13: 978-1938168130

iClicker class response system

ISBN: 9781464120152

Biopac Student Laboratory Guide, Biopac Systems Inc. Manual (available in lab)

Supplementary Texts and Materials

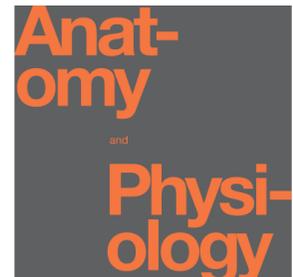
<https://openstax.org/details/books/anatomy-and-physiology#student-resources-section>

Pocket Companion to Guyton and Hall Textbook of Medical Physiology, 13e (Guyton Physiology) 13th Edition

Publisher: Saunders; 13 edition (June 4, 2015)

ISBN-10: 145577006X

ISBN-13: 978-1455770069



Course Learning Outcomes -

1. Describe how the body works, from the molecular level to organ systems and to the whole body
2. Explain the importance of physiology in modern medicine.
3. Examine the role of the scientific method in the study of physiology as it relates to evaluating evidences and drawing logical conclusions.
4. Examine the tissue level of organization and interpret the role of tissues in human systems. Compare and contrast the location, organization and function of the four basic classifications of human tissues.
5. Define homeostasis and explain how this concept is used in physiology and medicine.
6. Describe the nature of negative and positive feedback loops and explain how these mechanisms act to maintain homeostasis.
7. Distinguish between intrinsic and extrinsic regulation and the roles of nervous and endocrine systems.
8. Examine and describe the major features and functions of the cardiovascular, respiratory, muscular, digestive, immune, reproductive, and renal systems and their contributions to homeostasis.
9. Describe the relationship between homeostatic imbalance and diseases in each of the organ systems.

COURSE ASSIGNMENTS AND GRADING

This course will consist points from iClicker responses (50 points) and four exams worth 100 points each. The laboratory is worth 200 total points distributed in pre-lab quizzes worth 50 points, 5 graded laboratory assignments at 20 points each, and a PI report worth 50 points total.

Class attendance is highly recommended

Missing classes may result in poor performance in the course. You are responsible for any information or assignments you missed in your absence. You will also miss on iclicker points for questions given during lecture, there is no making up missed iclicker points. I highly recommend reading the assigned chapters before coming to class.

iClicker questions

Each lecture, you will be asked to respond to a number of questions using the iClicker student response system. The questions will come from lecture material that was covered previously, so it is in your best interest to keep up with the material. You will receive one point for answering **all** the questions asked each day and an additional point for each correct answer. Your final iclicker grade will be based on the percentage of points you have earned. Any student found in possession of more than one iClicker during lecture will be given an automatic F in the course and who belongs to the second clicker will also be given an F for the course.

Exams

There will be four exams during the term worth 75 pts. each. Exams will consist of multiple choice, short answer, fill in the blank and matching questions. Content from the laboratory exercises will also be included. **There will be no make-up exams.** Failure to appear at exam time without 24 hours prior notice to the instructor with an appropriate excuse, or an appropriately documented emergency, will result in zero points for that exam.

Laboratory Work

In lab, students work in groups of three, you will need to come up with a lab group name for submitting all of your laboratory exercises. Each lab is three hours in length. You are expected to stay until the exercise has been completed and until all materials are put away and your area cleaned. This semester's lab sessions will start with an introduction to the scientific method, writing and reviewing skills. The subsequent labs will consist of investigative experiments utilizing various techniques such as glucose determination, urinalysis, and collecting physiological data such as ECG, EMG. and pulmonary functions, using BioPac (a software program). Each group of students is responsible for carrying out all and understanding the assigned experiments. Of the investigative experiments, each student will chose one exercise for full-length lab report using the scientific method as described elsewhere. The full-length lab report will utilize the *principal investigator system* described below.

Laboratory Pre-lab Quizzes

The first 5 minutes of each laboratory will be devoted to an iClicker quiz over the exercise to be conducted that day. Questions will be asked that you should be able to answer only if you read the day's exercise. Each quiz will be worth 5 points and there will be no making up the quiz if you are late or miss lab.

Laboratory Exercises

For each laboratory exercises, you will find sheets for recording data and answering questions. These sheets are due by the beginning of the next laboratory period after the lab was completed and will be submitted by group. Completed sheets must be turned in before the laboratory starts, no late exercise write-ups will be accepted. Be sure to put the lab group name and exercise number in the subject line. I will at random, choose 5 of these exercise write-ups to grade; they are worth 20 points each for a total of 100 points.

PI laboratory report

A principal investigator (PI) is the lead person in a research group that is responsible for initiating the project, overseeing the experiment, writing the paper and incorporating reviewer's comments into the final draft of the paper. For each investigative lab there will be one PI and two reviewers. In this semester, every student will be a PI once and reviewer twice. The table below outlines the PI system. Each paper is worth 60 points to the PI and 20 points for each reviewer. The reviewer's points are awarded based on the percentage points earned by the PI. If the PI gets 100% on the lab, each reviewer will get 15 points and if the PI gets 50%, the reviewers only get 7.5 points. The reviewers therefore contribute to the total number of points for the paper. The PI would lose points if the reviewer does not do a good job. The comments and editing from each reviewer should be included with the final version of the paper. Lab reports are due 2 weeks from the date of completion of the exercise. Late papers will be penalized 5 points per day. All reports need to be submitted electronically in Blackboard. The peer review sheets can be turned in as paper, but reports must be submitted in electronic form.

Principal Investigator (PI) System

	PI Lab 1	PI Lab 2	PI Lab 3
Student A	PI	Reviewer	Reviewer
Student B	Reviewer	PI	Reviewer
Student C	Reviewer	Reviewer	PI

The PI Laboratory Grading sheet

Introduction	5 points
Results-text	5 points
Results- figures/tables	5 points
Discussion	5 points
Conclusion	5 points
Clarity, general grammar and mechanics	3 points
References	2 points
Report Total	30 points
Peer reviewer (2 @ 10 points each)	20 points
TOTAL	50 points

Course Grading

Your grades will be assigned as follows:

Assessment	Total Points
Exams	400
iClicker responses	50
Prelab quizzes	50
Lab Exercises	100
PI Lab report	50
Total	650

I will use plus/minus grading.

Grading Scale (%)	
94-100	A
90-93	A-
87-89	B+
84-86	B
80-83	B-
77-79	C+
74-76	C
70-73	C-
67-69	D+
64-66	D
60-63	D-
0 - 59	F

COURSE POLICIES:

Email

Course questions should be directed to me at mgrobner@csustan.edu. Please be sure to put ZOO 4280 in the subject line as I get many emails everyday and I want to be sure to respond to yours quickly. For issues with BlackBoard, please contact the helpdesk, linked from the BlackBoard login page.

Cell Phones

Cell phones should not be out or used during class. Any cell phones out during lecture or laboratory will be confiscated and returned at the end of the period. If your cell phone is out during an exam, this will result in an automatic F for the exam.

Recording Policy:

Audio or video recording of classes (tape and digital format) or use of cameras/phones to photograph or record lectures is not permitted. An exception is made for students registered with Disability Resource Services, who are approved for this accommodation. In such exceptions, DRS students will be asked to sign a "Recording Agreement" which disallows them from sharing recordings with other individuals unless approved by the DRS program.

Academic Dishonesty and Misconduct

Exams, reports, and presentations are indicators of individual performance. Copying off another student's exam, plagiarized reports, presentations or papers constitutes cheating. There is zero tolerance for cheating. Cheating in any capacity in this class will result in penalties ranging from a minimum of a zero on the assignment or exam to a maximum of expulsion from California State University, Stanislaus as indicated by the official University Policy regarding dishonesty and misconduct.

Grades of "Incomplete"

From The University Catalog –

An Incomplete signifies (1) that a portion of required coursework has not been completed and evaluated in the prescribed time period due to unforeseen but fully justified reasons beyond the student's control, and (2) that there is still a possibility of earning credit. It is the responsibility of the student to bring pertinent information to the attention of the instructor and to determine from the instructor the remaining course requirements which must be satisfied to remove the Incomplete. The conditions for removal of the Incomplete shall be put in writing by the instructor and given to the student, with a copy placed on file with the department chair. A final grade will be assigned when the work agreed upon has been completed and evaluated.

Any Incomplete must be made up within the time limit set by the instructor; in any case, no more than one calendar year following the end of the term in which the Incomplete was assigned. An Incomplete should never be used to (1) give a failing student an opportunity to redo unsatisfactory work or complete additional work; or (2) give a student more time to complete his/her work when the reasons for the delay have been within his/her control. This limitation prevails whether or not the student maintains continuous enrollment. Failure to complete the assigned work will result in an incomplete reverting to a grade of NC for grading options 1 and 2, and to a grade of IC for grading option 3. (See the Academic Standards section of this catalog and the Schedule of Classes Informational Guide for grading options.)

In cases of prolonged illness or any emergency which necessitates an extension of time to complete the course, the student may petition through the academic department where the course was offered. Students may not be permitted to graduate until all Incompletes are removed or evaluated as "IC" grades. Students are not to reregister in courses in which they have an Incomplete.

http://catalog.csustan.edu/content.php?catoid=12&navoid=541&returnto=search#indi_stud_cour

University Academic Conduct Policy

There will be zero-tolerance for plagiarism/cheating. Plagiarism and/or cheating will result in a 0.0 for the class. For further information, please see the CSU Stanislaus catalog for Student Code of Conduct

http://catalog.csustan.edu/content.php?catoid=3&navoid=115#stud_cond

RESOURCES

University Library

For help with researching materials for your PI report, please go to the following for tutorials on the various resources the library has to offer:

<http://library.csustan.edu:8080/researchassistance.html>

Disability Resource Services

CSU Stanislaus respects all forms of diversity. By university commitment and by law, students with disabilities are entitled to participate in academic activities and to be tested in a manner that accurately assesses their knowledge and skills. They also may qualify for reasonable accommodations that ensure equal access to lectures, labs, films, and other class-related activities. Please see the instructor if you need accommodations for a registered disability. Students can contact the Disability Resource Services office for additional information. The Disability Resource Services website can be accessed at

<http://www.csustan.edu/DRS/>

Phone: (209) 667-3159

Tentative Lecture Schedule

Materials will be active online with due dates, please check Blackboard periodically to make sure you don't miss any assignments.

DATE	TOPIC	CHAPTER
Aug 23, 25	Homeostasis: A Framework for Human Physiology	1
Aug 28, 30	Chemical Composition of the Body	2
Sep 1, 6	Movement of Molecules Across Cell Membranes	3
Sep 8, 11, 13	Nervous System	12
Sep 15, 18, 20	Central Nervous System	13
Sep 22	Exam 1	
Sep 25, 27	Autonomic Nervous System	15
Sep 29, Oct 2	Endocrine System	17
Oct 4, 6	Muscle	10
Oct 9,11	Cardiovascular System: Blood	18
Oct 13, 16	Cardiovascular System: Heart	19
Oct 20	Exam 2	
Oct 23, 25	Cardiovascular System: Vessels and Circulation	20
Oct 27, 30	Immune System	21
Nov 1, 3, 6	Respiratory System	22
Nov 8, 13, 15	Digestive System	23
Nov 17	Exam 3	
Nov 20, 22	Metabolism	24
Nov 27, 29	Urinary System	25
Dec 1, 4	Fluid Balance	26
Dec 6, 7, 11	Reproduction	27
Dec 18	Final Exam 11:15-1:15	

Tentative Lab Schedule

Date	Topic	Section
Aug 28	Getting Started Introduction of general Conceptual Models	Introduction, Homeostasis, Flowcharts and Metric System
Sep 11	BioPac Tutorial	
Sep 18	Diffusion, Osmosis and Tonicity	Transport
Sep 25	Polygraph	BioPac 9
Oct 2	The Nervous System - Hearing and Equilibrium, Mammalian Eye	Vision Ear
Oct 9	Electroencephalogram	BioPac 3 & 4
Oct 16	The Muscular System	BioPac 1 & 2
Oct 23	Electrocardiography (ECG)	BioPac 5 & 7
Oct 30	Blood Pressure and Heart Sounds	BioPac 16 & 17
Nov 6	Immune System	Immunity
Nov 13	The Respiratory System Acid/Base Balance	BioPac 12 & 13
Nov 20	Digestive System	Digestion
Nov 27	Glucose	Glucose metabolism
Dec 4	Exercise Physiology	BioPac
Dec 11	Renal Regulation of Fluid and Electrolyte Balance, Urinalysis	Renal