

ZOO 2235: HUMAN PHYSIOLOGY

Spring 2016 Syllabus

LECTURE:	Human Physiology 2235 (Section 001 – Dulai)		
PLACE:	Naraghi 104		
TIME:	TR 12:30 pm - 1:45 pm (75-minutes)		
TEXTBOOK:	<i>Vander's Human Physiology</i> . 13th Edition. Reic Widmaier, H. Raff, and K. Strang. (2014) - I wish you to register and purchase the package (textbook access and the Connect module). Compulsory purchase		
OTHER:	Classroom Clickers (iClickers) are a compulsory purchase or rental – get these from the campus bookstore.		
INSTRUCTOR:	Dr. Kamal Dulai	Office Hours:	T: 5:00 pm – 6:00 pm
Phone:	209 607 0304		R: 2:00 pm – 3:00 pm. Also by appointment
Email:	kdulai@csustan.edu		
Office:	N 251		

INTRODUCTION

The purpose of ZOO 2235 is to provide students with a fundamental understanding of how organ systems function in concert to maintain whole body homeostasis. Physiology also describes how biological systems respond to endogenous and exogenous perturbations to maintain homeostasis. The inability of the body to maintain homeostasis of a particular function often leads to a pathological condition described by the discipline of pathophysiology. In order to understand the pathophysiology of certain conditions, it's imperative that students learn how the system works under natural, controlled (unperturbed) conditions. The mandatory labs shall help enforce many of the concepts presented in class. This course is also a gateway to many of the health related careers.

POLICIES & PROCEDURES

Please carefully familiarize yourself with the policies below. It shall be assumed that you have read and understood them.

SCORES & GRADES

Course Scoring:

Assignment	Point Allocation	Total Points	% of Total Points
Exams (Midterms)	100 points each x 3	300	27.3%
LearnSmart module (total)	300 points	300	27.3%
Final Exam	300 points	300	27.3%
<i>Standard Lab Write-ups & Lab Participation</i>	<i>12 reports @ 60 points each + 12 sessions x 5 each = (660 lab points converted to 200 syllabus points)</i>	<i>200</i>	<i>18.2%</i>
Total		1100	100%
Clicker Based Attendance & Participation Bonus Points*		50	4.8%

Note: . only from clicker usage.*

Letter Grades: The final distribution of grades is given below. Sorry, no exceptions shall be made!

Course Point Score	Letter Grade	Course Point Score	Letter Grade
88.00%	to 100.00%	A	
85.00%	to 87.99%	A-	
81.00%	to 84.99%	B+	
78.00%	to 80.99%	B	
75.00%	to 77.99%	B-	
71.00%	to 74.99%	C+	
68.00%	to 70.99%	C	
65.00%	to 67.99%	C-	
61.00%	to 64.99%	D+	
58.00%	to 60.99%	D	
55.00%	to 57.99%	D-	
0.00%	to 54.99%	F	

Information on grade appeals, incompletes, etc. can be found in the *CSUStan Grading Policy* available from the Registrar.

COURSE SPECIFIC POLICIES

Mid-term Exams:

Three mid-exams will be given during the indicated lecture periods. These shall consist of a mix of question formats, **including multiple choice answer questions, fill-in, short answer, and annotation**. Please bring with you a green Scantron (Form 882-E) with your name and student number correctly filled in, a pencil and your student ID. In most cases a simple calculator may also be required.

Midterm exams are **cumulative**. You are expected to be familiar with the material covered in previous assessments, and shall be tested on it. Study guides are NOT offered – as all content is important!

Final Exam:

A single two hour **cumulative** final exam will be given during the final week. The final shall consist of 100 multiple choice answer questions. **NOTE:** You may be asked specific questions on material covered by **any** component of the course; past exams, labs, discussion topics, and lectures.

BEWARE: Note the time and place for the final may be different from the regular lecture times.

Lecture Attendance

Students should attend all lectures. Classroom Response devices (clickers) shall be used to record attendance and participation in other activities. It is YOUR responsibility to bring your clicker to class. Attendance shall be taken automatically at the **start** of each lecture, using clickers, and bonus points shall be awarded for attendance and participation (1 point/lecture). Please arrive on time or risk missing on this activity. If you leave the lecture before it concludes do not expect to be awarded these points! No further opportunity shall be afforded to regain these points. A further **10 bonus points** shall be awarded automatically should you attend 80% of the lectures, for a maximum of 50 bonus points. It is YOUR responsibility to bring your clicker to class. If you forget it, or lose it, then please do not ask for compensation, as it will be denied. If your clicker malfunctions, either during class or outside class, take it back to the book store immediately. Your clicker is equivalent to a calculator – if it malfunctions or the battery expires, it is your responsibility to take corrective measures, not that of the instructor!

Team-based Learning:

At the beginning of the term, students shall be surveyed. Based on the analysis of this data, each student shall be placed in a team, whose members shall sit together, discuss and work solutions, and provide consensus graded answers to select questions for the remainder of the semester. Each team shall comprise six members. It is imperative that you learn to cooperate in a positive manner with other team members. Learn to identify strengths in others and yourselves and use these to your advantage.

Bonus Points

During the semester occasions **may** arise where the teaching staff may offer the entire class an opportunity to make up missed points on select portions of exams by completing homework assignments. These points shall be added to that examination grade, as appropriate. This activity, the number of bonus points, and periodicity is at the sole discretion of the course instructor.

Independent Study Groups

Although not mandatory, students are **strongly** encouraged to form large (6-15) member study groups, which should meet outside official course hours to tackle course material. Based on data from previous years, these study groups have provided an 18 point advantage on average. You are encouraged to meet with the lecturer early in the course and discuss your learning methodology.

Make-up exams will not be offered for any midterm assessments.

No make-up mid-term exams are offered under any circumstances. Students who miss a midterm will receive a zero for the entire exercise unless they provide documentation, within 7 days of their return, for one of the following acceptable excuses:

1. Incapacitating illness or accident -- requires a note from student's physician (not a family member) or from UC Merced Health Services.
2. Death or serious illness of an immediate family member—requires proper documentation.
3. State or federally accepted religious observance or an academic activity (you will be sent to the Office of Student Life to supply proof). This also has to be acceptable to the instructor of record, and you must present your case well ahead of time.

Students with a **documented excuse** (only as above) shall receive a provisional grade on the midterm report based on the average of their other completed mid-term scores. Appropriate official written proof must be supplied in all

cases to the instructor, either prior to the event or in any case **within 7 days** upon your return. Failure to do so will result in a zero score for that assignment.

Final Exam

No make-up of the final exam is permitted. MISSING THE FINAL EXAM IS A SERIOUS ISSUE. Students who miss the final exam shall receive a grade of "F" for the course. **DO NOT PLAN HOLIDAYS, WEDDINGS, BIRTHDAY PARTIES, OR OTHER ACTIVITIES DURING THE SEMESTER. You will not be permitted an alternative exam schedule, and will fail the class.** Students with an acceptable excuse (as provided in the list above), and if the student was achieving a passing grade (C- or better) in all course work up until the final exam, can arrange with the instructor for a process to remove the **incomplete (I grade), that shall be awarded**, from their records within the time period stated by University policy.

LABS

Lab Work: Please note that lab attendance is mandatory.

The instructor shall grade twelve (12) reports, although you will be responsible for submitting all reports.

This course requires weekly laboratory meetings. However, the format of these labs is not the same from week to week. In lab, although you will work collectively in groups of three, the written work you submit must follow the following guidelines set by us. **Each report must be written independently by each student.**

You will be required to sign a waiver of liability form, but nothing we do is hazardous to your health!

In addition, there will be computer assignments given during lab time. These are to be completed as a group and will count as part of your grade. Any computer exercises not completed will result in the appropriate penalty.

Note: Penalties: Ten percent of the points shall be deducted from lab assignments turned in after the **start** of the lab period on the day they are due. Lab assignments will not be accepted more than one week after the due date (at the start of lab). Students are required to attend the lab from the start time until they are dismissed by their instructor. If you leave early you shall be marked absent for that entire lab. Clean-up is part of the lab. You **MUST** clean-up prior to departing.

If you must miss a lab for an acceptable reason, let us know ahead of time. If you do not inform us in advance, you may receive a zero for the lab. If you do inform us ahead of time and have an acceptable reason for missing class, you will need to arrange to access the data for that lab and still submit the required report. Your lab write up will be due at the start of the section in which you are enrolled the following week. Thus, you may have less than the standard 7 days to complete the report, under these circumstances.

In any event, **every student must complete all lab writeups**, irrespective of the nature of their excuses, by the conclusion of this course, or they will receive a failing grade at the conclusion of the semester. **No exceptions.**

GENERAL

Course Participation:

Participation in this course is strongly encouraged. It helps students and teaching staff clarify material, and promotes scientific dialogue. Scientific data clearly shows that attendance and participation do benefit student understanding and do positively influence student grades. Typically, students who succeed attend lecture on a regular basis. Students are expected to attend all lectures, although it is discretionary. Note that students are responsible for any material discussed in their absence, and for determining if any bonus assignments have been posted. For students whose final scores fall right on the border of a grade change (ex. A-/B+), active engagement and participation in the course **may** increase your chances of receiving the higher score. *This would be exclusively at the discretion of the instructor.*

Course Materials and Handouts:

In addition to the textbook and class handouts, computer and internet access shall be required for this class. For students who do not otherwise have access to a computer or the internet, computers **may** be available at several campus locations including the main reading room in the library. Copies of the lecture PowerPoint's will also be available in Acrobat format (.pdf files) at the ZOOLOGY 2235 BLACKBOARD site after the lecture has taken place.

Homework and Revision:

Plan to devote approximately 3 hours per lecture hour, on average. This does not include classroom time. So, for each approximately 75 minute lecture, you should spend 4 quality revision hours!

Electronic Aids:

The use of electronic devices is prohibited during exams and assessments. The only exception shall be simple calculators, which must be declared and checked by the staff prior to use. No cell phones (or cell phone calculators), no iPads, or any other electronic devices are permitted. Leave all cell phones in your bags during examinations and tests (best not to bring them for security reasons). **Turn any ringers off!**

During other periods, please prevent your electronic devices from interfering with instruction. If you must take a phone call, please have the courtesy to step out. The use of electronic aids to circumvent the spirit of any assessment is a very serious violation of policy, and is not permitted.

Regrade policy:

Regrade requests will only be accepted within **one week (7 days)** from the date a scored assessment is returned. For each question requiring attention, you must submit a written explanation describing why you believe your response should be reevaluated. Please know we reserve the right to regrade your **entire assessment**. As a result, your score could either increase or decrease.

BEWARE: A random sample of all assessments will be photocopied after initial grading. If a comparison of the photocopy to the exam submitted for regrading indicates any alteration, the case will be forwarded to the Office of Judicial Affairs. **Never alter any exam, quiz, or other assessment material returned to you.**

Student Services:

There are many resources on campus. For more information please visit, <http://www.csustan.edu/tutoring/>. Tutoring Services are located in the Library building, room L112. Every student should make an effort to visit with them and at a minimum have understanding of what services are available.

Student and faculty tutors, who have previously passes this class or administered similar material, are available from 8 am – 6 pm daily. This resource is available to all and is located in room Naraghi 124. No appointment is necessary and walk-ins are most welcome.

In addition, there is The Biology Club, which encompasses a group of former/present biology students who are available for consultation and advice. Check with the Biology Office in Naraghi Hall.

Disability Services:

If any student with any form of learning disability wishes or has registered for this course, they should contact the instructor as soon as possible so rapid arrangements can be made to address those needs. CSU Stan and this instructor are committed to making our courses accessible to all students, including students with limited mobility, impaired hearing or vision, and learning disabilities. Students who may need academic accommodation(s) services should visit the Disability Services web site at <http://www.csustan.edu/drs/contactus.html> and also contact the Disability Services Coordinator at the Disability Resource Services office (209) 667-3159 located in the Mary Stuart Rodgers Educational Services Gateway, Room MSR 210 or visit <http://www.csustan.edu/drs/> as early as possible in the semester so that appropriate arrangements can be made.

Group and independent assignments in ZOOL 2235:

Some activities in ZOOL 2235 involve group work and we encourage you to discuss any of the materials in the text, lectures, and/or discussion sessions with the instructors and other students, **but the work you submit must be your own for all of the following:**

- Quizzes
- Midterm and final assessments

That is, each student must generate their own answers **written in their own words** to all written questions. At the first instance of copied answers on assignments, no credit will be given *to all students with duplicate answers* and the assignments will be forwarded to the Vice-Chancellor for Undergraduate Affairs and the Office for Judicial Affairs. Subsequent copied assignments could lead to dismissal from course or the university (see section on Academic Integrity below).

Academic integrity:

Academic integrity is the foundation of an academic community and without it none of the educational or research goals of the university can be achieved. All members of the university community are responsible for its academic integrity. Existing policies forbid cheating on examinations, plagiarism and other forms of academic dishonesty. The current policies for CSU Stanislaus are described on the *Student Responsibilities web site pages* and also available from your instructor. The following general guidelines are adapted from Office of Judicial Affairs (www.csustan.edu/JudicialAffairs/.../Student_Judicial_Process-Academic.pdf):

Examples of academic dishonesty include:

- receiving or providing unauthorized assistance on examinations

- **using unauthorized materials during an examination**
- **plagiarism – using materials from sources without citations**
- **altering an exam and submitting it for re-grading**
- **fabricating data or references**
- **using false excuses to obtain extensions of time or to skip coursework**

The ultimate success of a code of academic conduct depends largely on the degree to which the students fulfill their responsibilities supporting academic integrity.

These responsibilities include:

- Be honest at all times.
- Act fairly toward others. For example, do not disrupt or seek an unfair advantage over others by cheating, or by talking or allowing eyes to wander during exams.
- Take group as well as individual responsibility for honorable behavior. Collectively, as well as individually, make every effort to prevent and avoid academic misconduct, and report acts of misconduct that you witness.
- Do not submit the same work in more than one class. Unless otherwise specified by the instructor, all work submitted to fulfill course requirements must be work done by the student specifically for that course. This means that work submitted for one course cannot be used to satisfy requirements of another course unless the student obtains permission from the instructor.
- Unless permitted by the instructor, do not work with others on graded coursework, including in class and take-home tests, papers, or homework assignments. When an instructor specifically informs students that they may collaborate on work required for a course, the extent of the collaboration must not exceed the limits set by the instructor.
- Know what plagiarism is and take steps to avoid it. When using the words or ideas of another, even if paraphrased in your own words, you must cite your source. Students who are confused about whether a particular act constitutes plagiarism should consult the instructor who gave the assignment.
- Know the rules – ignorance is no defense. Those who violate campus rules regarding academic misconduct are subject to disciplinary sanctions, including suspension and dismissal.

Flexibility Clause:

Circumstances may arise during the course which may prevent the staff from fulfilling each and every component of this syllabus; therefore, the syllabus may be subject to small adjustments. Students will be notified prior to any changes, if possible.

Welcome & Great Learning!

ZOOL 2235 - Spring 2016 – Course Timetable:

Theme	L#	Date	Lecture Topic	Chp.	Obj*
Introduction	1	R 28 Jan	Introductions and Course Expectations; Homeostasis	1	1
Regulation	2	T 2 Feb	Homeostasis (Cont)	1	1,2,3
Biochemistry	3	R 4 Feb	Chemical Comp. Review. Protein Binding, Enzymes & Metabolic	2,3	1
Cell Biology	4	T 9 Feb	Protein Binding, Enzymes & Metabolic, Diffusion & Transport	3,4	1,2
	5	R 11 Feb	Endocytosis and Exocytosis, Epithelial Transport; Cellular Receptors (5.1)	4,5	1,6
Sensory Sys.	6	T 16 Feb	Signal Transduction Pathways (5.2)	5	1,6
	7	R 18 Feb	Neurons – (sections A & B)	6	1,6
	8	T 23 Feb	MID-TERM EXAM 1 (Ch 1 - 5)	-	-
	9	R 25 Feb*	Neurons – (sections C & D)	6	1,6
	10	T 1 Mar	Sensory Physiology (section A & B)	7	1,6
	11	R 3 Mar	Sensory Physiology (section C & D)	7	1,6
Effector Sys.	12	T 8 Mar	Muscle Physiology – (section A)	9	1,6
	13	R 10 Mar	Muscle Physiology – (section B)	9	1,6
	14	T 15 Mar	Movement Physiology – (10.1 – 10.3)	10	1,6
	15	R 17 Mar	Movement Physiology – (10.4 – 10.6)	10	1,2
	16	T 22 Mar	MID-TERM EXAM 2 (Ch 1 - 10)	-	-
	17	R 24 Mar	Endocrine System – (section A & B)	11	1,2,6
	-	T 29 Mar	SPRING BREAK		
	-	R 31 Mar			
Cardiac	18	T 5 Apr	Endocrine System – (sections C, D & E)	11	1,2,6
	19	R 7 Apr	Cardiovascular Physiology – (section A)	12	1,2,6
	20	T 12 Apr	Cardiovascular Physiology – (sections B & C)	12	1,2,3,5
	21	R 14 Apr	Cardiovascular Physiology – (sections D, E & F)	12	1,2,3,5
Renal	22	T 19 Apr	Renal Function – (section A)	14	1,2,3,4
	23	R 21 Apr	Renal Function – (section B)	14	1,2,3,4,5,6
	24	T 26 Apr	MID-TERM EXAM 3 (Ch 1 - 12)	-	-
	25	R 28 Apr	Renal Function – (section C)	14	1,3,5
Respiratory	26	T 3 May	Respiratory Physiology – (13.1 – 13.4)	13	1,3,4,5
	27	R 5 May	Respiratory Physiology – (13.5 – 13.9)	13	1,2,3,4,5,6
Digestion	28	T 10 May	Digestion – (15.1 – 15.3)	15	1,3,4,5
	29	R 12 May	Digestion – (15.4)	15	1,2,3,4
Biochemistry	30	T 17 May	Energy Metabolism	15	1,2,3,4
	E	T 24 May	EXAM - FINAL 11:15 am to 1:15 pm		

PLEASE NOTE: Exams will use Scantrons. Scantrons will not be provided; please buy a pack (Green – Form 882-E) from the bookstore. Always bring Scantrons with you to all sessions.

Learning Outcomes for ZOOL 2235 (*numbers referenced in timetables)

By the end of the course, students should be able to:

1. Understand the concept of homeostasis
2. Describe action potentials and the integration of electro-chemical signaling in organ function
3. Describe how the various organs systems are integrated to maintain whole body function
4. Understand and apply the scientific method
5. Conduct literature search and write a scientific paper in the form of a manuscript

Your undergraduate learning outcomes: Program Learning Outcomes for the Biology Major

Graduates from the Biological Sciences programs will have demonstrated:

1. An understanding of the tenets of modern biology and an understanding of how cellular functions are integrated from the molecular level to the cellular level, through to the level of organism and functioning ecosystems.
2. An ability to develop and critique hypotheses and to design experiments, models, and/or calculations to address these hypotheses.
3. The ability to use appropriate instrumentation and computational tools to collect, analyze and interpret data.
4. The ability to read, evaluate, interpret, and apply numerical and general scientific information.
5. A familiarity with and application of safety in good laboratory and field practices.

Lab Schedule for Spring 2016 – Dulai section 002 - Tuesdays at 6 pm to 8:50 pm

Week	Lab	Week starting		Lab Topic
1	-	29	Jan	No Labs
2	1	2	Feb	Introduction, Metrics, and Charts
3	2	8	Feb	Homeostasis and Scientific Method
4	3	15	Feb	Diffusion and Osmosis
5	4	22	Feb	Glucose Metabolism
6	5	29	Feb	BSL Intro and Galvanic Skin Response/Electrodermal Activity (EDA)
7	6	7	Mar	Neuron Potentials, Senses, and Reaction Time
8	7	14	Mar	Muscle Physiology and Electromyograms (EMG)
9	8	21	Apr	The Heart, ECG, and Cardiovascular Physiology
10	-	28	Mar	Spring Break
11	9	4	Apr	Pulmonary Physiology
12	10	11	Apr	Acid/Base Balance
13	11	18	Apr	Renal Physiology
14	12	25	Apr	Digestion
15	13	2	May	Exercise Physiology
16	-			No Labs
17	-			No Labs