

# Introduction to Human Physiology

## Physiology 1 L.A. Valley College Spring 2012

Section: 3332 MW 5:00pm – 8:05pm AHS 243

Instructor: Dr. Gary Kovnat

Office: AHS 222

Office Hours: MW 10:00am – 11:30am, TTh 11:15am – 12:45pm AHS 222

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### COURSE DESCRIPTION:

Introduction to the function of human organ systems. Functional characteristics of the human body are related to the structure of cells, tissues and organs comprising the muscular, nervous, endocrine, circulatory, immune, respiratory, digestive, urinary, and reproductive systems.

### COURSE OBJECTIVES:

- Define and interpret the terminology of physiology.
- Apply concepts from the textbook to principles demonstrated in the laboratory.
- Explain processes associated with the mechanics of human body systems.
- Utilize computer software in the simulation of organ system function.

### STUDENT LEARNING OUTCOMES:

- Students will have acquired skills necessary to analyze and identify human diseases.
- Students will have acquired skills necessary to demonstrate how physiological equipment can be used to determine organ system function.

### REQUIRED MATERIALS:

*Fundamentals of Physiology* 4<sup>th</sup> edition/custom (Sherwood) 2012  
*PhysioEx 9.0: Laboratory Simulations in Physiology* 1<sup>st</sup> edition (Zao) 2012  
BSL-ACCPACK (BIOPAC accessory packet)

### IMPORTANT DATES:

Last day to add: 2/20/12

Last day to drop with no record: 3/4/12

Last day to drop with a "W": 5/6/12

## EVALUATION:

Your grade will be determined by points earned on class activities, and is based on the following standard grading scale: A  $\geq$  90%, B  $\geq$  80%, C  $\geq$  70%, D  $\geq$  60%. A curved scale will not be utilized, because I do not wish to create an environment in which outstanding students are perceived as “setting the curve”.

Lecture Exams - There will be 5 objective exams, which will consist of 60 multiple-choice questions, 15 matching questions, 15 completion questions, and 1 essay question (10 points). Each exam will be worth 100 points. Exams will cover material only from the preceding quarter of the semester. *You are expected to purchase Scranton answer sheets (form #882-ES) for all exams.*

Labs - There will be 20 laboratory investigations, worth 5 points each. Each person is expected to complete a *separate* laboratory report and submit it at the end of the lab session; *late labs will not be accepted.* Several of the labs will be computer simulations of complex experiments, which will require the CD that is supplied with your PhysioEx lab manual. Lab protocols (other than computer simulated labs) can be downloaded from the website.

Lab Practical - There will be 1 lab practical exam at the end of the semester, which will consist of 25 questions related to the laboratory activities performed in class. The lab practical will be worth 50 points, and will be cumulative for the semester. Answer sheets will be provided in class.

Insurance - Up to 1% of the total class points may be invested in an “insurance policy”. These points will not be included in the cumulative point total during the semester, but may be applied at the end of the semester to raise a marginal grade (9<sup>th</sup> percentile only).

## POLICIES:

Make-ups - A 50 question multiple choice exam will be provided to replace a missed exam, if the absence was verified as an emergency with appropriate documentation. The make-up exam must be arranged at least one week in advance, during posted office hours. The final exam cannot made-up. *Only one missed exam may be replaced during the semester.*

Accommodation - Students who miss class due to religious observance or who require special assistance under ADA guidelines will be accommodated if validated with appropriate documentation. However, I must be informed of the need for accommodation in writing prior to the second week of class.

Attendance - You may be excluded from the class when absences exceed the number of hours the class meets per week; this will depend on the circumstances of your absence and an evaluation of your academic performance. *It is your responsibility to drop this course if you so decide – I am not obligated to exclude students who stop showing up to class. Be aware that all students on my roster at the end of the semester will receive a grade!*

Academic Dishonesty - I expect my students to exhibit the highest ethical standards. Even the *appearance* of dishonesty may prevent you from receiving credit for that exam (or assignment), and could possibly lead to academic dismissal.

Cell Phones - Please disengage the sound on cell phones during class, and turn off cell phones during exams. *Cell phones must not be accessible or visible during exams, due to the potential misuse of this technology for cheating.*

## Lecture/Lab Schedule

Week	Day	Topic	Reading
1	2/6	Course Introduction Homeostasis	Chapter 1
	2/8	Cells <i>Introduction to Lab</i>	Chapter 2
2	2/13	Cells <i>The Purple Pickle</i>	Chapter 2 <i>Lab 1 (Manual)</i>
	2/16	Membrane <i>The Cell-Transport and Permeability</i>	Chapter 3 <i>Demo (PhysioEx 1)</i>
3	2/20	<b>No Class – President’s Day</b>	
	2/22	<b>Exam 1</b> Nerves	<b>1-3, 4</b>
4	2/27	Nerves <i>Neurophysiology of Nerve Impulses</i>	Chapter 4 <i>Lab 2 (PhysioEx 3)</i>
	2/29	Afferents <i>General Sensation</i>	Chapter 6 <i>Lab 3 (Manual)</i>
5	3/5	Afferents <i>Vision</i>	Chapter 6 <i>Lab 4 (Manual)</i>
	3/7	Efferents <i>Hearing &amp; Equilibrium</i>	Chapter 7 <i>Lab 5 (Manual)</i>
6	3/12	Efferents <i>EMG</i>	Chapter 7 <i>Lab 6 (BIOPAC)</i>
	3/14	<b>Exam 2</b> Muscles	<b>4, 6, 7, 8</b>
7	3/19	Heart <i>ECG</i>	Chapter 9 <i>Lab 7(BIOPAC)</i>
	3/21	Heart <i>Frog Cardiovascular Physiology</i>	Chapter 9 <i>Lab 8 (PhysioEx 6)</i>
8	3/26	Circulation <i>Blood Pressure and Pulse Determination</i>	Chapter 10 <i>Lab 9 (Manual)</i>
	3/28	Circulation <i>Cardiovascular Dynamics</i>	Chapter 10 <i>Lab 10 (PhysioEx 5)</i>
9	4/2	<b>No Class – Spring Break</b>	
	4/4	<b>No Class – Spring Break</b>	
10	4/9	<b>No Class – Spring Break</b>	
	4/11	<b>Exam 3</b> Plasma	<b>8-10, 11</b>
11	4/16	Plasma <i>Hematocrit/ Blood Typing</i>	Chapter 11 <i>Lab 11 (Kit)</i>
	4/18	Respiration <i>Pulmonary Function</i>	Chapter 12 <i>Lab 12 (BIOPAC)</i>
12	4/23	Respiration <i>Respiratory System Mechanics</i>	Chapter 12 <i>Lab 13 (PhysioEx 7)</i>
	4/25	Excretion <i>Urinalysis</i>	Chapter 13 <i>Lab 14 (Kit)</i>
13	4/30	Excretion <i>Renal Physiology</i>	Chapter 13 <i>Lab 15 (PhysioEx 9)</i>
	5/2	<b>Exam 4</b> Digestion	<b>11-13, 15</b>
14	5/7	Digestion <i>Digestive Enzymes</i>	Chapter 15 <i>Lab 16 (Kit)</i>
	5/9	Hormones <i>Processes of Digestion</i>	Chapter 17 <i>Lab 17 (PhysioEx 8)</i>
15	5/14	Hormones <i>Endocrine System Physiology</i>	Chapter 17 <i>Lab 18 (PhysioEx 4)</i>
	5/16	Reproduction <i>Diabetes Insipidus</i>	Chapter 18 <i>Case Study 1</i>
16	5/21	<b>Lab Practical Exam</b>	
	5/23	<b>Presentation of Modules</b>	
17	5/28	<b>No Class – Memorial Day</b>	
	5/30	<b>Exam 5 (Final Exam) 4:00 – 6:00 pm</b>	<b>15, 17, 18</b>
		Note: Syllabus subject to change.	