

West LA College
HUMAN PHYSIOLOGY 001
Spring 2014
T & Th 6:45PM – 10PM
MSA 211
Section 4726

Course Description: This course explores the principles of human physiology. This course will encompass a broad variety of topics, including an introduction to the histology, cell biology, human genetics, and the major concepts of structure, function and pathology of the major human organ systems. This course is an extension of human anatomy and explores the physiological concepts of the human body at an in-depth level.

Course Objectives:

1. an understanding of general biologic concepts
2. an understanding of human physiology and how it relates to the mechanisms of human body function
3. an understanding of specific physiologic concepts such as: the electrical properties of cells, the regulation of human processes by hormones and nerves, the control of body temperature, blood pressure and respiration rate, the regulation of the urinary and reproductive system, the function of the heart and circulation system, the absorption of food and the integration of systems to maintain homeostasis
4. an understanding of specifically designed laboratory exercises in order to further our knowledge of specific physiologic systems
5. an enjoyment of science

WLAC Student Learning Outcomes:

West LA College as an institution is committed to an environment of respect for its students. Its mission is to serve the community by providing quality instructional services through its programs and facilities. The college is currently involved in creating a series of Student Learning Outcomes (SLOs) that are designed to maximize the successes and experiences of the students here at WLAC. This course is designed to reflect many of these SLOs. Specifically, this course is designed to help students improve their critical thinking and communication skills. To do this, this course encourages students to work together to analyze and solve problem-solving questions, to improve their ability to formulate their thoughts and answers in a clear, well-organized manner and to communicate these ideas in a formal class and informal laboratory setting.

WLAC Science Dept SLOs: (Health Science Option)

Students who complete courses in the WLAC Health Sciences will be able to use appropriate biological and physiologic terminology to communicate with purpose and clarity. Students will also be able to explain how living things are organized, how they inherit and express genetic information and how they acquire and utilize energy. Finally, students will begin to understand how the human body responds to and recovers from injury and how the human body can protect itself from disease-causing microbes.

Prerequisites: this is a very rigorous course that will demand considerable time, effort and discipline. Therefore prerequisites will be strictly enforced. This course requires human anatomy and Biology 3 as prerequisites (minimum grade of “C”) in addition to English 28. Also strongly recommended are English 101 and Chemistry 51. If not recommended prerequisites are college level courses in chemistry and/or biochemistry outside WLAC.

Professor: Patricia Zuk, Ph.D

Phone: I do not provide students with my cell phone number. So - If you need to contact me immediately before class to tell me you are running late for an exam, you must do so through one of your fellow classmates – so be sure to exchange phone numbers. For other messages not of an urgent nature, leave an e-mail message at: zukpat@yahoo.com or pzuk@mednet.ucla.edu. My WLAC email address is zukp@wla.edu - but I NEVER check this - so be sure to use my yahoo or ucla email address.

Website: I provide my students with basic versions of the lecture notes on my website – www.patriciazuk.com. The notes are in powerpoint format and are easy to download and print. Bring these printed lecture notes to class in order to help make your lectures easier and more productive. Or bring a laptop since WLAC is a wi-fi campus. I would recommend you print out several lectures in advance in case we get done one lecture early and move onto the next topic. I update this site several times throughout the course and will let you know when you should go on-line to get new materials

Office hours: by appointment or M & W from 6PM to start of class.

Mailbox: Please do not leave written messages. I may not pick them up daily. Therefore, drop me an e-mail message to ensure I get your message.

Required Materials

1. **PhysioEx 8.0 for Human Physiology** – Laboratory Simulations in Physiology
-Stabler, Smith, Pearson and Lokuta
-Pearson Benjamin Cummings Publishers
-ISBN 0-321-54857-4

Having computer-based labs will mean I will ask most (if not all) of you to bring your laptops to class. We will work in groups of three or four so that means those of you without laptops will not have to panic. You won't have to bring your laptops every class – just those in which we are doing labs. However, you may want to bring your laptops anyway to help in the note-taking process – just type quietly!!!!

2. Course Text: I do not recommend a specific textbook as many physio texts are more than adequate. But I have listed a few texts you might find helpful. Save yourself some money and buy a used text. Older editions are more than adequate!!

1. **Principles of Human Anatomy and Physiology, G. Tortora and B. Derrickson** (11th edition). Earlier editions will be fine.
2. **Human Physiology, L. Sherwood 6th edition. Thompson Publishing.** Many figures in my lecture notes may be taken from this text. This is an excellent text for your collection. Earlier editions will be fine.
3. **Vander's Human Physiology, Widmaier 13th edition. McGraw Hill Publishing.** This text is available on www.mhbm.com as an ebook with student assignments. You will have to register as a student on this site in order to access these assignments – if you wish to do them. They are NOT mandatory but may help you in your studying. However, registering on this site may allow you to purchase the ebook version of this textbook.
4. **Fox Human Physiology, 13th edition. McGraw Hill Publishing.** This would also be available through www.mhbm.com as an etext.
5. **Human Physiology, D. Silverthorn 3rd edition. Pearson Publishing.** This is a relatively advanced textbook and may be helpful in understanding some of the more difficult concepts

Etects: In deference to those students who wish to have etects rather than paper ones, you may purchase an electronic copy of many of these texts listed above. You can also “bundle” your text with McGraw Hill's on-line learning system ConnectPlus. This will give you access to various assignments that may help you in your studying (LearnSmart) and their on-line system of flashcards to help quiz you on what you have learned (SmartBook). You will also be given access to Anatomy and Physiology Revealed which will help you to remember the anatomy you should have already taken! To purchase an electronic copy of the Vander's or Fox's Human Physiology texts go to <http://www.mhbm.com>. Current pricing for 1 semester of ConnectPlus is \$85.00. Other online systems may be available to you and I will give you information on those as I come to learn of them.

Materials Needed:

1. Course Textbook and study guides
2. Laptops for computer labs
3. Scantrons for exams. Form 882-N-E. These may be purchased in packets from any college bookstore.
4. Number 2 pencils for the scantrons

Attendance: I will not take attendance at lecture/lab beyond the first week of class. However, you are all adults and must obviously realize that to do well you must come to lecture/lab. Your grade will depend on your active attendance and your participation during lectures. You will be responsible for all information, lecture notes etc... that you miss. **DO NOT skip a lecture and then ask me for help. There must be DIRE circumstances for you to miss an exam so don't even try it! THEREFORE CHECK YOUR SYLLABUS! SCHEDULING VACATIONS DURING EXAM TIMES WILL NOT BE CONSIDERED AN EXCUSE FOR MISSING AN EXAM!!! I cannot stress this enough.**

Drop dates: All enrollment procedures are to be completed by YOU!! **YOU are responsible for your enrollment status in this course and in all others!!!** So.....Be aware of drop dates. I will NOT drop you from the course until you confirm your decision with me. Therefore – if you choose to leave the class and do not drop – you will receive a failing grade at the end of the semester.

You are responsible for obtaining this withdrawal by asking me to sign the appropriate withdrawal slip. If not, you will receive a failing grade and I will NOT comply with any appeals etc.... Therefore, be responsible. Please do NOT assume I will take responsibility for maintaining your enrollment status because I will not.

Exams: All exams will include multiple-choice questions so bring a scantron and pencils. Exams may also include fill in the blank questions and short answers. The exams will encompass all lectures prior to the exam date. Your quizzes will be mainly short answer and fill in the blanks. **You will have five written exams and several quizzes throughout the semester.** All exams are equally weighted. All quizzes are equally weighted. You cannot make an exam or a quiz up – so

check your personal schedule with that of the class. **Please be aware the WLAC Standards of Student Conduct will be strictly enforced for all examinations and during each class period.** Improper classroom conduct will result in verbal warnings and me asking you to leave the classroom. Plagiarism and any form of cheating during an exam or quiz will be grounds for me asking you to leave the classroom, confiscation of any testing material, a grade of “O” or “F” on such exams and possible disciplinary action with the college. Please download and read the WLAC Standards of Student Conduct that is posted on www.patriciazuk.com under your WLAC physiology link.

Course Break-down:

Lecture exams: 5 exams @ 100 points each	500 points
Quizzes	25 points
TOTAL	525 points

HUMAN PHYSIOLOGY WLAC

Patricia Zuk, Ph.D.
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SPRING 2014

Schedule of Topics

Because several of you may opt to use different textbooks than those recommended here – actual chapter numbers for pre-class reading assignments are not given on this schedule. However, you are expected to arrive at class prepared for each lecture. This will involve downloading and reading of the lecture being planned for that class period and any text book chapters this topic involves.

<u>Week</u>	<u>Date</u>	<u>Topic</u>	
1	Feb 11	Introduction to Physiology, Basic Biochemistry and Homeostasis	
	Feb 13	Cell Physiology The nucleus: Genetics, DNA, RNA and protein synthesis	
2	Feb 18	Cell Physiology cont..... The nucleus: Genetics, DNA, RNA and protein synthesis	Mitosis Lab
	Feb 20	Cell Physiology The plasma membrane: structure and composition Cellular transport and Membrane Potentials Cytoskeleton, cytosol and organelles Cellular respiration: glycolysis and oxidative phosphorylation	DNA transcription lab
3	Feb 25	Cell Physiology Cytoskeleton, cytosol and organelles Cellular respiration: glycolysis and oxidative phosphorylation	PhysioEx Permeability lab #1
	Feb 27	Cellular Communication Hormones & Neurotransmitters: types and modes of signaling Receptors & Signal transduction	QUIZ: Cell Physiology
4	Mar 4	LECTURE EXAM #1	
	Mar 6	The Nervous System Neurons and Glial cells Action Potentials and Synaptic transmission: Synapses	
5	Mar 11	The Central Nervous System Organization of the Nervous System: CNS & PNS Protection of the CNS: Cerebrospinal fluid Organization and Functions of the CNS	“Fun with your Brain” Lab
	Mar 13	The CNS Organization and Functions of the CNS	
6	Mar 18	The CNS cont.....	PhysioEx Neurophysiology Lab #3
	Mar 20	The Peripheral Nervous System The Somatic division and the Neuromuscular junction The Autonomic Nervous System Reflexes	QUIZ: Nervous Tissue and the CNS
7	Mar 25	The Peripheral Nervous System (Special Senses) Sensory receptors & pathways Special Senses	Reflexes Lab
	Mar 27	The PNS – Special Senses cont.....	
8	Apr 1	LECTURE EXAM #2	
	Apr 3	The Endocrine System Hormones and the endocrine organs	
9	Apr 8	SPRING BREAK – no class	
	Apr 10	SPRING BREAK – no class	

- 10** **Apr 15** **The Reproductive System**
 Reproductive Physiology
- Apr 17** **Muscle Physiology**
 Skeletal Muscle Contraction: Molecular Basis
 The mechanics of Skeletal muscle contraction
- QUIZ: Endocrinology and the Reproductive Sys.**
- 11** **Apr 22** **Muscle Physiology cont.....**
Apr 24 **LECTURE EXAM #3**
- 12** **Apr 29** **Blood and the Immune System**
 Hematology: blood composition
 Blood types and antigens
 Blood clotting
- May 1** **Immunity cont....**
 White blood cells and immunity
- 13** **May 6** **The Cardiovascular system**
 Cardiac Physiology
 Cardiac cycle and output
 The EKG
- May 8** **The Cardiovascular system**
 Blood vessels & blood pressure
- PhysioEx Cardiovascular Physiology labs #5 & 6**
- 14** **May 13** **LECTURE EXAM #4**
May 15 **Respiratory System**
 Respiratory Mechanics
 Gas Exchange
 Control of Respiration
- QUIZ: Blood & CV System**
- 15** **May 20** **Digestive System**
 Overall structure and function
 Digestive enzymes: food breakdown and absorption
 Control of the digestive system: energy balance
 Homeostasis: insulin/glucagon action
- May 22** **Digestive System cont.....**
- 16** **May 27** **NON-INSTRUCTION DAY – no class**
May 29 **Urinary System**
 Filtration pressures and rates
 Control of reabsorption
 Fluid and acid-base balances
- QUIZ: Digestive System**
- 17** **Jun 3** **LECTURE EXAM #5**

This is a TENTATIVE schedule of topics. Topics may be changed to accommodate time needed.