

Thanh-Thuy Bui, M.D.
Phone: (310) 532-3670 ex 5361
Email: tbui@elcamino.edu

Fall 2009
El Camino College

Physiology 31: Human Physiology
Section 1419 Room NS 123
Monday/Wednesday 8:00-9:01AM Lecture
Monday/Wednesday 9:05-12:15PM Laboratory

Office: NS 106

Office Hours:	Monday	7:30-8:00AM	Room NS 123
		4:45-5:30PM	Room NS 106
	Tuesday	By appointments	
	Wednesday	7:30-8:00AM	Room NS 123
	Friday	7:30-8:00AM	Room LS 113

Mission Statement: The mission of El Camino College is to meet the educational needs of its diverse community and ensure student success by offering quality, comprehensive educational opportunities.

Course Description: This course is a study of cellular physiology and the functional aspects of the following body systems: circulatory, respiratory, digestive, excretory, reproductive, muscular, nervous, and endocrine. In the laboratory, experiments are performed to demonstrate principles discussed in lecture. This course is designed primarily for those majoring in the health sciences.

Prerequisite: Successful completion of Anatomy 30 or 32 and Chemistry 20, 21A, or 4 with a grade of C or better in both courses are the prerequisites.

Requirements:

Text: Silverthorn, D.E. Human Physiology: An Integrated Approach. 5th edition, 2009.

Lab manual: Marieb, Human Anatomy and Physiology Laboratory Manual (Cat Version). 9th edition.

Benjamin Cummings, 2008.

BIOPAC Student Kits that can be purchased the bookstore.

Course Objectives:

1. The student should be able to describe the cell and its organelles as well as cellular functions.
2. The student should be able to describe the characteristics of blood and all its components.
3. The student should be able to describe the components of the circulatory system including cardiac contraction, regulation of blood pressure, cardiac output, etc.
4. The student should be able to explain the components of the respiratory system including the mechanics of breathing, cellular events of gas exchanges, and different lung volumes.
5. The student should be able to explain the components of the digestive system including the macromolecules of life and the processes of their breakdown.
6. The student should be able to discuss the systems involved in excretion and secretions of materials through the human body.
7. The student should be able to explain the components of the muscular system including muscle contractions and the mechanics of the muscle.
8. The student should be able to explain the components of the nervous system including membrane potentials, nerve impulse, and interpretation of the signals.
9. The student should be able to explain the components of the endocrine system including the glands and relative control of bodily functions.
10. The student should be able to explain the components of the reproductive system including genetics.

Student Learning Outcomes and Assessment Activities: Students will construct a concept map to illustrate how the urinary, endocrine, cardiovascular, respiratory, nervous, musculare, integumentary, lymphatic, and digestive systems interact with each other to maintain water balance in the body.

Grading:

<u>Ways to earn points:</u>	<u>Point Value</u>	<u>Standard Scale for Grade:</u>
Final Exam	200 points	A= 90-100%
5 unit exams (100 points each)	500 points	B= 80-89.4%
5 lab practica (50 points each)	250 points	C= 70-79.4
Attendance and Participation	15 points	D= 60-69.4
6 clinical case studies handouts	60 points	F= below 60%
<u>19 lab assignments (5 points each chapter)</u>	<u>95 points</u>	
Total	1120 points	

Final Exam: 100 points, 100 multiple choices, matching, true and false questions, 2.5 hours. The exam will be cumulative, based on text and lectures. No make-up exam unless there is a verifiable emergency.

5 Unit Exams: There will be 70-100 multiple choices, matching, true and false, and labeling questions, lasting 90 minutes. There will also be some short answer essay questions. No make-up exam unless there is a verifiable emergency.

5 Laboratory Practica: There will be 30-40 multiple choices, matching, true and false, and labeling questions, 60 minutes. There will also be some short answer essay questions. No make-up exam unless there is a verifiable emergency.

Laboratory assignments: Students will hand in their laboratory assignments at the beginning of class found in their lab manual. No late homework assignments will be accepted after 8:00AM. Each homework assignment will be graded according to completion and accuracy of the exercise.

Attendance and Participation: Students are required to attend both the lecture and lab. Professor reserves the right to drop students who have missed more than 4 sessions of class. Points are awarded for asking questions, contributing to class discussion, and for answering the professor's oral questions.

Extra Credit: Opportunities will be announced throughout the semester. Please do not ask for extra credits.

Academic Dishonesty: Cheating and plagiarism, as defined in the El Camino College catalog, will not be tolerated. Students caught cheating or acting suspiciously will get an "F" for the assignment or exam and will be reported to the Division Dean and Dean of Students Services. No opportunities will be given for cheating.

Special Accommodations: If you have a specific learning disability, please contact the Special Resource Center at (310) 660-3295 for documentation and let me know as soon as possible so that we can suitable accommodate your learning needs.

Repeat Policy: Each student is allowed only 3 attempts to successfully complete any class with a C grade or better. Please do not enroll in this class now if you are not prepared or do not have the time to do the work.

Visitors: Visitors, including children, are not permitted in class at anytime, mainly because of the school's insurance coverage rules.

Food and Drinks: Food and drinks of all kinds including water is not permitted in class at anytime. You may not eat or drink in lab at anytime.

Disclaimer Statement: Students will be notified ahead of time when and if any changes are made to course requirements or policies.

Important Dates:

Friday, September 11, 2009	Last day to add classes
Friday, September 25, 2009	Last day to drop class without a W grade
Friday, November 20, 2009	Last day to drop class with a W grade

PHYSIOLOGY 31				
Wk #	Date		Tentative Lecture and Lab Schedule	Assigned Reading
1	8/31/09	Lecture	Introduction of Physiology	Ch 1
		Lab	Scientific Method and Metric Measurements	p. xiii-xix
	9/2/09	Lecture	Molecular Interactions	Ch 2
			Compartmentation: Cells and Tissues	Ch 3
		Lab	Tissues	Marieb 6A
			PhysioEx Tissues	Marieb 6B
2	9/7/09	Lecture	LABOR DAY HOLIDAY	
		Lab	NO SCHOOL	
	9/9/09	Lecture	Energy and Cellular Metabolism	Ch 4
			Membrane Dynamics	Ch 5
	Lab	Molecules of Living Systems	Handout	
			Cells Transport Mechanisms (wet lab)	Marieb 5A
3	9/14/09	Lecture	Review for Lecture Exam	
		Lab	PhysioEx Cell Transport Mechanisms	Marieb 5B
	9/16/09	Lecture	LECTURE EXAM # 1 (CHAPTERS 1-5)	
		Lab	Clinical Case Studies	
4	9/21/09	Lecture	Communications, Integration, and Homeostasis	Ch 6
		Lab	LAB EXAM # 1 (p. xiii-xix, Marieb 6A, 6B, 5A, 5B, and Molecules of Living Systems)	
	9/23/09	Lecture	Introduction to Endocrine System	Ch 7
			Endocrine Control of Growth and Metabolism	Ch 23
	Lab	PhysioEx Endocrine Stimulation	Marieb 28B	
5	9/28/09	Lecture	Neurons: Cellular and Network Properties	Ch 8
		Lab	Clinical Case Studies	
	9/30/09	Lecture	Review for Lecture Exam	
6	10/5/09	Lecture	LECTURE EXAM # 2 (CHAPTERS 6-8, 23)	
		Lab	Human Reflex Physiology	Marieb 22
	10/7/09	Lecture	Central Nervous System	Ch 9
Lab		Clinical Case Studies		
7	10/12/09	Lecture	Sensory Physiology	Ch 10
		Lab	PhysioEx Skeletal Muscle Physiology	Marieb 16B
			PhysioEx Neurophysiology	Marieb 18B
	10/14/09	Lecture	Efferent Division: Autonomic and Somatic Motor Control	Ch 11
Lab		Cranial Nerves	Handout	
8	10/19/09	Lecture	Muscles	Ch 12
			Integrative Physiology I: Control of Body Movement	Ch 13
		Lab	LAB EXAM # 2 (Marieb 28B, 22, 16B, 18B, and cranial nerves)	
	10/21/09	Lecture	Review for Lecture Exam	
Lab		Blood	Marieb 29A	
			PhysioEx Blood Analysis	Marieb 29B
9	10/26/09	Lecture	LECTURE EXAM # 3 (CHAPTERS 9-13)	
		Lab	BIOPAC Electrocardiography	Marieb 31
			PhysioEx Frog Cardio Stimulation	Marieb 34B
	10/28/09	Lecture	Blood	Ch 16
		Immune System	Ch 24	
	Lab	Clinical Case Studies		
10	11/2/09	Lecture	Cardiovascular Physiology	Ch 14
			Blood Flow and Control of Blood Pressure	Ch 15
		Lab	Blood Pressure and Pulse Determination	Marieb 33A
			Blood Pressure and Pulse Determination	Marieb 33B

	11/4/09	Lecture	Review for Lecture Exam	
11	11/9/09	Lecture	LECTURE EXAM # 4 (CHAPTERS 14-16, 24)	
		Lab	Clinical Case Studies	
	11/11/09	Lecture	Mechanics of Breathing	Ch 17
			Gas Exchange and Transport	Ch 18
		Lab	LAB EXAM # 3 (Marieb 29A, 29B, 31, 34B, 33A and 33B)	
12	11/16/09	Lecture	The Kidneys	Ch 19
		Lab	PhysioEx Respiratory System Mechanics	Marieb 37B
	11/18/09	Lecture	Integrative Physiology III: Fluid and Electrolyte	Ch 20
		Lab	PhysioEx Renal Physiology	Marieb 41B
			Urinalysis (wet lab)	Marieb 41A
13	11/23/09	Lecture	Review for Lecture Exam	
	11/25/09	Lecture	LECTURE EXAM # 5 (CHAPTERS 17-20)	
		Lab	PhysioEx Acid-Base Balance	Marieb 47B
14	11/30/09	Lecture	Digestion	Ch 21
		Lab	Clinical Case Studies	
	12/2/09	Lecture	Metabolism and Energy Balance	Ch 22
		Lab	Chemical and Physical Process of Digestion	Marieb 39A
			PhysioEx Chemical and Physical Process of Digestion	Marieb 39B
15	12/7/09	Lecture	Integrative Physiology: Exercise	Ch 25
		Lab	LAB EXAM # 4 (Marieb 37B, 41B, 41A, 47B, 39A, and 39B)	
			Human Genetic Traits and Genetic Problems	
	12/9/09	Lecture	Reproduction and Development	Ch 26
			Genetic Problems	
16	12/14/09	Lecture	Review for Final Lecture Exam	
		Lab	FINAL LAB EXAM (Clinical Case Studies and Genetics)	
	12/16/09	Lecture	FINAL LECTURE EXAM (CHAPTERS, 5, 6, 7, 8, 13, 24, 14, 15, 18, 19, 20, 21, 22, 25, 26)	
			The chapters are taken from the textbook used in class.	
			The Marieb chapters are taken from the lab manual used in class.	

FINAL LECTURE EXAM:

Chapter 5	Membrane Dynamics
Chapter 6	Communication, Integration, and Homeostasis
Chapter 7	Introduction to Endocrine System
Chapter 8	Neurons: Cellular and Network Properties
Chapter 13	Integrative Physiology I: Control of Body Movements
Chapter 24	Immune System
Chapter 14	Cardiovascular Physiology
Chapter 15	Blood Flow and Control of Blood Pressure
Chapter 17	Mechanics of Breathing
Chapter 18	Gas Exchange and Transport
Chapter 19	The Kidneys
Chapter 20	Integrative Physiology II: Fluid and Electrolyte
Chapter 21	Digestion
Chapter 22	Metabolism and Energy Balance
Chapter 25	Integrative Physiology III: Exercise
Chapter 26	Reproduction and Development