

COURSE SYLLABUS

COURSE NUMBER AND TITLE	Physiology 31 – Human Physiology Section 1420
INSTRUCTOR NAME	Dr. Le
CONTACT INFORMATION	Elcamino.drle@yahoo.com

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: Physiology 31 is an intensive lecture and laboratory course that focuses on the function of organ systems of the human body. Emphasis will be given to the regulation and interaction of these systems. Clinical applications will be used to facilitate understanding of the subject and to stress the importance of the materials in everyday life and in clinical settings. The lectures will correspond closely with weekly laboratories to allow the student several modalities to learn the fundamental concepts of physiology including: homeostasis, membrane transport, and the function of muscle, nervous, circulatory, respiratory, digestive, endocrine and reproductive systems. Computer-assisted laboratories will enhance the study of this interesting subject matter.

Prerequisites: Anatomy 30 or 32 and Chemistry 20, 21A or 4 with a minimum grade of C in the prerequisites.

Required Lecture & Lab Textbooks and Materials:

1. Text: Silverthorn, D.E. Human Physiology: An Integrated Approach. 5<sup>th</sup> edition, 2009.
  2. Lab manual: Marieb. Human Anatomy and Physiology Laboratory Manual (Cat Version). 9<sup>th</sup> edition. Benjamin Cummings, 2008.
  3. BIOPAC Student Kit
  4. #2 pencil to be used for quizzes and exams.
  5. Form #882-E scantrons (Exams)
  6. Form #815-E scantrons (Quizzes)
- \*\*need IDs to check-out laptop computer during labs

Student Learning Outcomes: upon completion of this course, the students should be able to:

1. Explain the basic levels of biological organization in the body.
2. Define metabolism and homeostasis and give examples of these processes in the body.
3. Explain the basic types of chemical reactions that our cells and bodies are dependent upon.
4. List the general characteristics and functions of a typical cell, its organelles and receptors.
5. Describe the general characteristics and functions of the four basic tissue types: epithelial, connective, nervous, and muscle.
6. Describe the characteristics of blood and all its components.
7. Describe the components of the circulatory system including cardiac contraction, regulation of blood pressure, cardiac output, etc.
8. Explain the components of the respiratory system including the mechanics of breathing, cellular events of gas exchanges, and different lung volumes.
9. Explain the components of the digestive system including the macromolecules of life and the processes of their breakdown.
10. Discuss the systems involved in excretion and secretions of materials through the human body.
11. Explain the components of the muscular system including muscle contractions and the mechanics of the muscle.
12. Explain the components of the nervous system including membrane potentials, nerve impulse, and interpretation of the signals.
13. Explain the components of the endocrine system including the glands and relative control of bodily functions.
14. Explain the components of the reproductive system including genetics.

Grading		Extra Credit Opportunities
6 Lecture exams (150-200 points each)	750-1000 points	<ul style="list-style-type: none"> <li>• 4 study guides: questions               <ul style="list-style-type: none"> <li>➤ 5 points per study guide (Student needs to answer the questions on a separate sheet of paper – I will not accept incomplete work nor the notes you take in class)</li> </ul> </li> </ul>
4 lab exams (100 points each)	400 points	NONE
16 Lab assignments (5 points each)	80 points	NONE
16 Lab quizzes (5 points each) *lab quizzes will be given before lab activities (NO MAKE-UP)	80 points	NONE
Attendance *1 point will be awarded for every day the student is present in lecture and lab from beginning until the end of class, NO EXCEPTIONS!!!	32 points	<ul style="list-style-type: none"> <li>• perfect attendance for the ENTIRE semester (ALL or NONE)               <ul style="list-style-type: none"> <li>➤ 32 points</li> <li>➤ student needs to be present in lecture and lab from beginning until the end of class, NO EXCEPTIONS!!!</li> </ul> </li> </ul>
Total	1342 - 1592	Extra credit assignments are optional
Final grades will be assigned as follows: A = 90 - 100% B = 80 - 89% C = 70 - 79% D = 60 - 69% F = <59% of the total points  I reserve the right to modify or change the tentative schedule and the total points for the class.		

**Lecture Exams:** Lecture exam questions will be based on material from the lectures, textbook, handouts and presentations, with an emphasis on information from the lectures. Lecture exams will consist primarily of multiple choice, matching, true and false, and short answer questions. Make-up lecture exams are strongly discouraged and will be granted only with verification of an emergency situation, and at the discretion of the instructor. If granted, make-up exams will be graded with an automatic 10-point deduction and may consist entirely of essay questions.

**Lab Practical Exams:** Lab exams will consist primarily of multiple choice, matching, fill-ins and short answers. No make-up exams can be given for lab exams.

**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:** 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.

**ACADEMIC DISHONESTY:** Cheating will not be tolerated in this class. This class abides by the official El Camino College Policy on Cheating & Academic Dishonesty. Students caught cheating or acting suspiciously will get an automatic "F" for the course. No make-up opportunities will be given for cheating. Additionally, the Dean of Student Affairs will be notified in writing of the incident, possible further action will be taken by that office.

**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 accommodate your learning needs.

**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

**Class etiquette:** Students must not speak in class during presentation unless invited, as the noise is disruptive to others. Continued violations will result in student being asked to leave the class. Students are not permitted to bring children into class, as they are disruptive for the rest of the students. Cell phones must be turned off. If not, they will be confiscated and returned at the end of the semester.

## Physiology 31 Tentative Lecture &amp; Lab Schedule (Note: this schedule is approximate and subject to change)

Wk	Date		Tentative Lecture and Lab Schedule	Assigned Reading
1	Tuesday 9/1/09	Lecture	Introduction of Physiology	Ch 1
		Lab	Scientific Method and Metric Measurements	p. xiii-xix☺
	Thursday 9/3/09	Lecture	Molecular Interactions	Ch 2
		Lab	Compartmentation: Cells and Tissues	Ch 3
2	Tuesday 9/8/09	Lecture	Energy and Cellular Metabolism	Ch 4
		Lab	Cells Transport Mechanisms (wet lab)	Marieb 5A☺
	Thursday 9/10/09	Lecture	Membrane Dynamics	Ch 5
		Lab	Molecules of Living Systems	Handout☺
3	Tuesday 9/15/09	Lecture	Communication, Integration, & Homeostasis	Ch 6
		Lab	Review for Lecture Exam	Review
	Thursday 9/17/09	Lecture	<b>LECTURE EXAM # 1</b> Introduction to the Endocrine System	<b>Ch 1-5</b> Ch 7
4	Tuesday 9/22/09	Lecture	Endocrine Control of Growth and Metabolism	Ch 23
		Lab	PhysioEx Cell Transport Mechanisms	Marieb 5B☺
	Thursday 9/24/09	Lecture	Neurons: Cellular and Network Properties	Ch 8
5	Tuesday 9/29/09	Lecture	Neurons: Cellular and Network Properties (cont'd)	Ch 8
		Lab	PhysioEx Endocrine Simulation	Marieb 28B ☺
	Thursday 10/1/09	Lecture	Central Nervous System	Ch 9
		Lab	Review for Lecture Exam	Review
6	Tuesday 10/6/09	Lecture	<b>LECTURE EXAM # 2</b>	<b>Ch 6-8, 23</b>
		Lab	PhysioEx Neurophysiology	Marieb 18B ☺
	Thursday 10/8/09	Lecture	Sensory Physiology	Ch 10
7	Tuesday 10/13/09	Lecture	Efferent Division: Autonomic and Somatic Motor Control	Ch 11
		Lab	Cranial Nerves	Handout☺
	Thursday 10/15/09	Lecture	Muscles	Ch 12
		Lab	<b>LAB EXAM # 2 (Marieb 18B, 23, 28B, and cranial nerves)</b>	
8	Tuesday 10/20/09	Lecture	Integrative Physiology I: Control of Body Movement	Ch 13
		Lab	Review for Lecture Exam	Review
	Thursday 10/22/09	Lecture	Blood	Ch 16
9	Tuesday 10/27/09	Lecture	<b>LECTURE EXAM # 3</b>	<b>Ch 9-13</b>
		Lab	BIOPAC Electrocardiography	Marieb 31
	Thursday 10/29/09	Lecture	Immune System	Ch 24
		Lab	PhysioEx Frog Cardio Stimulation	Marieb 34B☺
10	Tuesday 11/3/09	Lecture	Cardiovascular Physiology	Ch 14
		Lab	Blood Pressure and Pulse Determination	Marieb 33B☺
	Thursday 11/5/09	Lecture	Blood Flow and Control of Blood Pressure	Ch 15
11	Tuesday 11/10/09	Lecture	<b>LECTURE EXAM # 4</b>	<b>Ch 14-16, 24</b>
		Lab	BIOPAC Respiratory Physiology	Marieb 37A
	Thursday 11/12/09	Lecture	Mechanics of Breathing	Ch 17
		Lab	<b>LAB EXAM # 3 (Marieb 29B, 33B, and 34B)</b>	
12	Tuesday 11/17/09	Lecture	Gas Exchange and Transport	Ch 18
		Lab	PhysioEx Respiratory System Mechanics	Marieb 37B☺
	Thursday 11/19/09	Lecture	The Kidneys	Ch 19
		Lab	PhysioEx Renal Physiology	Marieb 41B☺
13	Tuesday 11/24/09	Lecture	Integrative Physiology III: Fluid and Electrolyte	Ch 20
		Lab	Review for Lecture Exam	Review
	Thursday 11/26/09		<b>Holiday: Thanksgiving</b>	Holiday
14	Tuesday 12/1/09	Lecture	<b>LECTURE EXAM # 5</b>	<b>Ch 17-20</b>
		Lab	PhysioEx Acid-Base Balance	Marieb 47B☺
	Thursday 12/3/09	Lecture	Digestion	Ch 21
15	Tuesday 12/8/09	Lecture	Metabolism and Energy Balance	Ch 22
		Lecture	Integrative Physiology: Exercise	Ch 25
	Lab	Human Genetic Traits and Genetic Problems	Handout	

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	Thursday 12/10/09	Lecture	Reproduction and Development	Ch 26
		Lab	Review for Final Lab Exam	Review
16	Tuesday 12/15/09	Lecture	Review for Final Lecture Exam	Review
		Lab	<b>FINAL LAB EXAM # 4 (Marieb 37B, 39B, 41B, 47B, and genetic problems)</b>	
	Thursday 12/17/09	Lecture	<b>FINAL LECTURE EXAM</b>	Ch 21,22, 25,26

**Lab assignments Due:** ☺ indicates that lab assignments will be collected and graded - 5 points each  
 All labs must be submitted on time and NO late lab(s) will be accepted.....NO EXCEPTIONS!!!!!!!