

Physiology 1
Introduction to Human Physiology
Los Angeles Mission College – Fall 2012

Instructor: *J. Michael Reynolds*

Lecture: MW 7:30 – 8:55 AM CMS 105

Lab: Lab 9:00 AM -12:10 PM M (#0405) or W (#0406) CMS 104

Office Hours: MW 12:15 – 1:15; TTh 12:15 – 1:15 PM in Office or Lab CMS 104

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and website <http://www.lamission.edu/~reynolmj/515>

Life Science Web Address: www.lamission.edu/lifesciences

Prerequisites: Biology 3 and Anatomy 1

Advisory: English 28 or ESL 8 – College-level reading, writing and study skills

Last day to drop without a W – September 7 (in person) or September 9 (internet)

Last day to apply for refund – September 10

Last day to drop with a W – November 16 (in person) or November 18 (internet)

Student Learning Outcome: *Physiology 1 students will explain and describe fundamental homeostatic processes of the human body and how they are controlled by the endocrine and nervous systems.*

Articulation: Physiology 1 articulates with CSUN Biology 281 (Human Physiology) & 282 (Human Physiology lab); together with Anatomy 1 articulates with CSULA Biology 200A and 200B (combined Anatomy and Physiology with labs). You are also encouraged to view articulation agreements at www.assist.org.

Physiology 1 is an intensive lecture and laboratory course that focuses on the function of organ systems of the human body. The lectures correspond closely with weekly laboratories allowing 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. Standard laboratories and computer-assisted laboratories enhance the study of this interesting subject matter.

Objectives

1. To learn the fundamental concepts of human physiology for advancement to certificate programs, allied health programs and bachelor degree programs at the university level.
2. To understand basic laboratory aspects of human body function working individually and in small groups, as will be expected in future course work and/or professional endeavors.
3. To learn to organize, process, and think critically about complex scientific processes in such a way as to become an independent learner, able to continue to grow as a student of science.

Required Books

required: Human Anatomy and Physiology, Elaine N. Marieb and Katja Hoehn (8th Edition, 2010)
Human Anatomy and Physiology Lab Manual (Cat Version w/ PAL 3.0 and PhysioEx 9.0 CD), Marieb, et. al. (10th Edition, 2012)
Physiology Lecture Notes Online, J. Michael Reynolds

Evaluation and Grading

- (1) Quizzes (8 x 20 = 160) A total of 8 quizzes will be administered during the semester. Each quiz will start at the beginning of class and will take approximately fifteen minutes. Quiz #1 will be on Wednesday, 9/5. Quizzes will emphasize all reading assignments and material covered in previous class meetings. The quizzes are intended to stress the importance of reading the assigned material in the text before coming into the lecture and staying up with the material as the semester progresses. Each quiz will be worth 20 points. At the end of the semester, the low quiz score will be dropped and the average of all quiz scores will be added to the point total as Extra Credit. **Quizzes cannot be made up.** Students will use a Scan-Tron answer sheet for the quizzes.
- (2) Laboratories (approximately 14 X 10 = 140 points) - Laboratories are **NOT** optional. All students must attend each week. Students are required to complete the Review Exercises in the back of the Laboratory Manual and return them during the lab the following week. Each of the Laboratory Exercise Assignments will be worth 10 points. Incomplete and late Review Exercises will be marked down. Do not underestimate the significance of these points on the final course grade. The Review Sheets are a very good way to review important concepts from the lecture and lab. Every semester there is at least one student who loses an entire letter grade by failing to turn in all of the laboratories complete and on time. Do not be this student! **A student who is absent for more than two laboratories is subject to receiving a failing grade in the course.**
- (3) Research Paper and Oral Presentation (30 Points) - Each student will be required to research and write a paper on a topic related to a *human disease* of interest to him/her. The paper is to be a minimum of five pages double-spaced and typed. The objectives and guidelines will be discussed in class. Students will also be required to give a brief summary of their paper to the class at the end of the semester through an oral presentation. Think about learning something and sharing it with the professor and your fellow classmates!! Deadlines will be:

Monday 10/15	Topic Selection Submitted in Writing
Wednesday 11/7	Three Different Sources for the Paper
Weeks of 11/26 and 12/3	Oral Presentations of Student Paper Topics in the Laboratory
- (4) Midterm Exams (2 x 120 = 240 points) There will be 2 midterm examinations scheduled on September 25 and November 5. Students will be required to write short essays as part of the exam. Examinations will cover material presented in the textbook reading assignments, the lectures and each of the laboratories. **No make-up examinations will be given.** A student who has an excused absence from one midterm examination will have the percentage earned on the next exam counted for that missed score.
- (5) Final Exam (150 points) The Final Examination will be given on Monday, December 10 from 7:30 – 9:30 AM. A significant portion of the final exam will be written. Students will be provided ahead of time with a list of 20 possible essay questions on topics from throughout the semester. The instructor will use this list to establish two groups with five questions in each group. The student will be required to respond to 3 questions from each group of 5. **No make-up Final Exam will be given.** Therefore, schedule all future personal, family, and vacation plans accordingly.

Grading Scale

<u>Percentage of Total Points</u>	<u>Letter Grade</u>
100 - 90	A
89 - 80	B
79 - 70	C
69 - 60	D
59 - lower	F

(NOTE: total points for the course may change depending on circumstances during the semester.)

Internet Access to Lecture Notes

The lecture notes for Physiology 1 can be accessed from the my college web page located on the internet at: <http://www.lamission.edu/~reynolmj/515>. On the left hand side under My Pages, click on Physiology 1.

Office Hours and Getting Help

I will remain after class to answer questions and offer individual assistance. Appointments to meet at other times may be arranged and are strongly encouraged. Do not be shy. I am here to help you learn the material and it is a joy for me to help students learn physiology. Do not leave any questions you may have unanswered.

Student Resources Available

Bookstore: For hours of operation, book availability, buybacks, and other information call 818-364-7767 or 7768 or visit <http://www.lamissionbookstore.com/>

Counseling Department: For appointments and information call 818-364-7655 or visit <http://www.lamission.edu/counseling/>

Disabled Students Programs and Services (DSP&S): For appointments, eligibility and information call 818-364-7732 or visit <http://www.lamission.edu/dsps/>

Extended Opportunity Programs and Services (EOPS): For appointments, eligibility and information call 818-364-7645 or visit <http://www.lamission.edu/eops/>

Financial Aid: For information and applications call 818-364-7648 or visit <http://www.lamission.edu/financialaid/>

Library: For information on hours, resources, workshops, and other services contact 818-364-7106 or visit <http://www.lamission.edu/library/>

Tutoring Services in Learning Center: Laboratories for Learning, Writing, Math & Science. Walk-in and appointment services offered. Call 818-364-7754 or visit www.lamission.edu/learningcenter/

General Comments and Suggestions

- There is no easy way – you must study to succeed. If you are not prepared to study this semester, that is OK. Just wait until you have enough time to devote to this course.
- **You must read the textbook in this class.** You will not remember it all the first time through. *That is why I am here - to be your cruise director and guide!* That is what lecture is meant to be! (1) Read text (2) attend lecture (3) study the text and lecture notes. I cannot learn the material for you. But I can sure help make sense of it all!!!
- **Come to class prepared!** This cannot be overemphasized. Casually reading the text before the lecture can help. Lectures are intended to assist you in organizing and understanding material that can be detailed and complex. Becoming familiar with the vocabulary and the concepts will make the lectures much more interesting and instructional. Laboratory time is limited and everyone must know what is to be accomplished.
- **Students must work together in lab on PhysioEx CD-ROM Exercises** – The laboratory is to be a collaborative effort, working with classmates to solve problems and to learn Physiology. Students who are absent from the lab are subject to receiving a failing grade for the course.
- **Do not fall behind!** This is a fast-paced course that covers a lot of material with relatively few class meetings. Seek help before you begin to get in trouble. I am here to help you learn.

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- **Work together!** This is not a correspondence course. We get together twice each week and in the laboratory so that classmates and lab partners can assist one another in learning physiology. Come to class prepared to learn and seek the assistance of others during labs.
- **Ask questions!** There is no such thing as a stupid question. The chances are that if you do not understand something, 80% of the class is sitting there as ignorant as you and is waiting for someone to ask. We have all been confused at some point, so speak up!

Additional Materials

Each student should purchase ScanTron Answer Sheets for the Quizzes, Midterms, and Final Exam.

Items Suggested to Include in the Term Paper

- Symptoms
- Diagnosis
- Epidemiology (numbers, groups, etc. affected)
- Etiology (underlying physiological or biological mechanism)
- Prognosis (likely outcome for the patient)
- Treatment
- Any other information pertinent to the disease

Lecture/Laboratory Schedule

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<u>DATE</u>	<u>Lecture/Laboratory</u>	<u>Reading/Lab Exercise</u>
Week 1 M 8/27 W 8/29	<i>Scientific Method, Scientific Notation, Metrics</i> Course Introduction REVIEW: Plasma Membrane and Cell Transport	<i>Preface of Lab Manual (xiv - xx)</i> <u>1</u> and <u>2</u> (REVIEW of Biology concepts) <u>3</u> (REVIEW of Biology concepts)
Week 2 M 9/3 W 9/5	<i>Cell Transport and Permeability: PhysioEx CD-ROM</i> NO CLASS – Labor Day Muscle Tissue and Action of Skeletal Muscle Quiz #1	<i>PhysioEx Exercise 1</i> <u>9</u>
Week 3 M 9/10 W 9/12	<i>Skeletal Muscle Physiology: BIOPAC</i> Muscle Contraction and Metabolism Nervous System, Cells and Membrane Potentials Quiz #2	<i>Exercise 16 – Activity 4 - BIOPAC</i> <u>9</u> <u>11</u>
Week 4 M 9/17 W 9/19	<i>Skeletal Muscle Physiology: PhysioEx CD-ROM</i> <i>Neurophysiology of Nerve Impulses: PhysioEx CD-ROM</i> The Synapse, Neurotransmitters, and Integration Reflex Physiology Quiz #3	<i>PhysioEx Exercise 2</i> <i>PhysioEx Exercise 3</i> <u>11</u> <u>13</u>
Week 5 M 9/24 W 9/26	<i>Human Reflex Physiology</i> Physiology of Autonomic Nervous System Midterm Exam #1	<i>Exercise 22</i> <u>14</u>
Week 6 M 10/1 W 10/3	<i>General Sensation</i> <i>Visual and Hearing Testing</i> Vision Hearing and Equilibrium	<i>Exercise 23</i> <i>Exercise 24 – Vision and Hearing Tests (only)</i> <u>15</u> <u>15</u>
Week 7 M 10/8 W 10/10	<i>Blood</i> <i>Blood Analysis: PhysioEx CD-ROM</i> Composition and Functions of Blood Quiz #4 Blood: Homeostatic Mechanisms and Diagnostics	<i>Exercise 29 – Activities #1, 2, 4, 5, 6, 7</i> <i>PhysioEx Exercise 11</i> <u>17</u> <u>17</u>
Week 8 M 10/15 W 10/17	<i>Conduction System of the Heart and ECG - BIOPAC</i> <i>Human Cardiovascular Physiology: Pulse and Pressure</i> Heart Anatomy and Physiology I Heart Physiology II	<i>Exercise 31 – Activity 1B – BIOPAC</i> <i>Exercise 33</i> <u>18</u> <u>18</u> (Paper Topic due)
Week 9 M 10/22 W 10/24	<i>Cardiovascular Dynamics - PhysioEx CD-ROM</i> <i>Cardiovascular Physiology: PhysioEx CD-ROM</i> Physiology of Circulation I Quiz #5 Physiology of Circulation II	<i>PhysioEx Exercise 5</i> <i>PhysioEx Exercise 6</i> <u>19</u> <u>19</u>

<u>Week 10</u>	<i>Respiratory System Physiology – BIOPAC</i>	<i>Exercise 37 – Activities #5, 7, 8</i>	
M 10/29	<i>Respiratory System Mechanics - PhysioEx CD-ROM</i> Physiology of Respiration I	<i>PhysioEx Exercise 7</i>	
	Quiz #6		<u>22</u>
W 10/31	Physiology of Respiration II		<u>22</u>
<u>Week 11</u>	<i>Chemical/Physical Processes of Digestion - PhysioEx CD-ROM</i>	<i>PhysioEx Exercise 8</i>	
	<i>Acid-Base Balance – PhysioEx CD-ROM</i>	<i>PhysioEx Exercise 10</i>	
M 11/5	<u>Midterm Exam #2</u>		
W 11/7	Physiology of Digestion		<u>23</u> (Paper Sources due)
<u>Week 12</u>	<i>No lab this week</i>		
M 11/12	NO CLASS – Veteran’s Day		
W 11/14	Physiology of Urinary System I		<u>25</u> : all
<u>Week 13</u>	<i>Urinalysis</i>	<i>Exercise 41A - all activities</i>	
	<i>Renal System Physiology - PhysioEx CD-ROM</i>	<i>Exercise 41B – all activities</i>	
	<i>Endocrine System Physiology - PhysioEx CD-ROM</i>	<i>Exercise 28B – all activities</i>	
M 11/19	Physiology of Urinary System II		<u>25</u> : all
	Fluid, Electrolyte, and Acid - Base Balance		<u>26</u> : all
	Quiz #7		
W 11/21	The Endocrine System: Hormonal Control		<u>16</u> : all
<u>Week 14</u>	<i>Individual Oral Presentations of Research Paper Topics (Paper due)</i>		
M 11/26	Reproductive Physiology		<u>27</u> : all
W 11/28	Reproductive Physiology		<u>27</u> : all
	Quiz #8		
<u>Week 15</u>	<i>Individual Oral Presentations of Research Paper Topics (Paper due)</i>		
M 12/3	Immune System: Mechanisms of B and T Cell Response		<u>21</u> : all
W 12/5	Immune System: Mechanisms of B and T Cell Response		<u>21</u> : all
<u>Week 16</u>			
	M 12/10	<u>Final Examination</u> (7:30 AM – 9:30 AM)	

Code of Honor and Integrity
Los Angeles Mission College
Department of Life Sciences

Students at Los Angeles Mission College, because they are members of an academic community dedicated to the achievement of excellence and the pursuit of honor, are expected to meet high standards of personal, ethical, and moral conduct. These standards require personal integrity and a commitment to honesty without compromise. Without the ability to trust in these principles, an academic community and a civil society cannot exist. Los Angeles Mission College students and faculty are as committed to the development of students with honesty and integrity as they are to the academic and professional success of its students.

The **Code of Honor and Integrity** is an undertaking of the students, first and foremost, both individually and collectively, that they will:

1. not give or receive dishonorable aid during exams, quizzes or assignments
2. do their share and take an active part in seeing to it that fellow students, as well as themselves, uphold the spirit and letter of the Code of Honor and Integrity.

Some examples of conduct that are regarded as being in violation of the Honor Code include:

- Copying from another's examination or quiz, or allowing another to copy from one's own papers
- Using any unpermitted source of information, human or other, during an exam, quiz or assignment that influences the grade; this includes the use of technological devices
- Any student-to-student collaboration that is unpermitted
- [Plagiarism](#) (plagiarism is defined as the use, without giving reasonable and appropriate credit to, or acknowledging the author or source, of another person's original work)
- Representing as one's own work as the work of another
- Giving or receiving aid on an academic assignment under circumstances in which a reasonable person should have known that such aid is not permitted

As a part of the effort to promote an environment of honesty and integrity during quizzes and examinations, the following guidelines will apply for any courses in the Department of Life Sciences:

1. Students will leave all books and all other non-essential items (e.g. paper, electronic devices) on the floor so that they are not useable nor block the sight line between professor and student. No electronic devices will be in reach.
2. Students will not communicate in any way that will dishonorably assist themselves or another student.
3. Students will leave the room during an exam only if permitted by the professor's policy. If permitted, only one student may leave the room at any time and be gone for only the average length of time needed for the stated purpose. Students will leave all purses, bags, books, phones, jackets, etc., in the classroom during the absence.
4. Students will promote the spirit and letter of the **Code of Honesty and Integrity** by dissuading fellow students from dishonest activity and, when such casual persuasion does not work, informing the professor of the possible dishonest activity, either anonymously, or otherwise.
5. Students will make every effort to avoid even the appearance of dishonesty or lack of integrity

Violation of this policy will not be tolerated and violators will be subject to severe penalties. The success of the **Code of Honor and Integrity** is based upon the collective desire of students, faculty and the community to live in an environment that embraces respect for that which is right – both in the college and in society as a whole.