

## Zoology 142L Anatomy and Physiology Laboratory II

(CRN 60122: T 5:30-8:15 PM)

‘Imiloa 103

<b>INSTRUCTOR:</b>	Ross Langston, PhD
<b>OFFICE:</b>	Hale ‘Imiloa 104
<b>EMAIL:</b>	langston@hawaii.edu
<b>OFFICE HOURS:</b>	TBA
<b>TELEPHONE:</b>	236-9119 (office) and 429-6218 (cell)
<b>EFFECTIVE DATE:</b>	Spring, 2014

### WINDWARD COMMUNITY COLLEGE MISSION STATEMENT

*Windward Community College offers innovative programs in the arts and sciences and opportunities to gain knowledge and understanding of Hawai‘i and its unique heritage. With a special commitment to support the access and educational needs of Native Hawaiians, we provide O‘ahu’s Ko‘olau region and beyond with liberal arts, career and lifelong learning in a supportive and challenging environment — inspiring students to excellence.*

### CATALOG DESCRIPTION

Laboratory to accompany ZOOL 142. Reinforces the facts and concepts of human anatomy and physiology discussed in ZOOL 142 through dissections, examinations of models, laboratory activities, and other hands-on experience. This course is intended for students entering health care or medically related fields such as nursing, physical therapy, and medical technology.

**Activities Required at Scheduled Times Other Than Class Times:** None

### STUDENT LEARNING OUTCOMES

Upon successful completion of ZOOL 142L, the student should be able to:

- 1) Use the scientific method to design and conduct a clinical research study.
- 2) Describe the anatomy of the endocrine, circulatory, lymphatic, respiratory, digestive, urinary, and reproductive systems from prepared slides, models, and real and virtual animal dissections.
- 3) Use basic laboratory and medical equipment (microscopes, sphygmomanometers, stethoscopes, ECG apparatus, & respiratory spirometers) to evaluate functions of the above body systems.
- 4) Use critical thinking to analyze and interpret clinical data.
- 5) Prepare an oral presentation and written summary of lab activities using the scientific method.

## COURSE CONTENT

### *Concepts or Topics*

The student will describe and integrate basic biological principles and define basic biological terms presented in lecture, required texts, and other instructional materials. These principles include the following areas:

- Anatomy of the endocrine systems and physiology of hormone actions
- Functions and components of blood
- Anatomy of the heart and regulation of heart rate and cardiac output
- Anatomy of blood vessels and regulation of blood pressure and blood flow
- Mechanisms of general and specific resistance
- Anatomy and physiology of the respiratory system
- Digestive anatomy, processes, nutrition, and metabolism
- Anatomy of the urinary system, renal physiology, and fluid & electrolyte homeostasis
- Anatomy and physiology of male and female reproductive systems
- Physiology of pregnancy and fetal development
- Genetics and inheritance

### COURSE TASKS

- 1) Attend class at scheduled times.
- 2) Participate in lab activities.
- 3) Complete required lab reports.
- 4) Complete weekly quizzes.
- 5) Complete 2 in-class practicums.
- 6) Present results of lab activities.

## ASSESSMENT TASKS AND GRADING

**QUIZZES** (100 points total- 10 points for each quiz). Students will take a short quiz at the beginning of each class. The quiz will be based on the material covered in the previous lab. Students who show up late to lab will receive a zero score on the quiz (**NO EXCEPTIONS!**). A total of 11 quizzes will be given. The lowest quiz score will be dropped.

**LAB REPORTS** (100 points total). Students are required to submit formal lab reports for TWO laboratory experiments (indicated by an ‘\*’ in the class schedule). These reports are usually due one week after the indicated lab activity, and must be turned in using the [www.turnitin.com](http://www.turnitin.com) website. The reports will be graded for completeness, originality, accuracy, clarity, and effort. The format for the lab reports will be discussed during the first laboratory session.

**LAB PRACTICUMS** (200 points total-100 points for each practicum). The student will take two lab practicums (non-cumulative) to demonstrate knowledge and understanding of information presented in lab activities. These practicums will cover anatomy (e.g., organ identification and histology) and physiology of major systems covered during lab and will be similar in content and scope to the lab quizzes.

**RESEARCH PRESENTATION** (50 points).

Students will work together in groups of 3-4 individuals. Each lab group will give an oral presentation (10-15 minutes) summarizing the activities of a chosen laboratory session. The format for research presentations will be discussed during the first lab session. (Please note that students must choose unique experiments on which to base their lab reports and research presentations; i.e., you may not do a lab report and research presentation on the same topic).

**ATTENDANCE & CLASS PARTICIPATION (50 points):** Attendance and class participation is mandatory. Each student is allowed **one** absence without penalty. Students with more than two un-excused absences will receive an “F” grade in the class. Students who leave early, do not participate in lab activities, or fail to turn in class data at the end of each lab will be counted as absent and thus receive zero class participation points for the lab.

### **POLICY REGARDING MISSED LABS OR EXAMS**

If you miss your assigned lab or practicum, please make arrangements to attend another lab section during the same week. Because most laboratory sessions and lab practicums require special setup and preparation, make-up labs (including quizzes and practicums) will NOT be given.

### **METHOD OF GRADING**

The assignment of points will be according to the following:

Quizzes (10 x 10)	100 points
Lab Reports (2 x 50)	100 points
Practicums (2 x 100)	200 points
Presentation	50 points
<u>Attendance</u>	<u>50 points</u>
<b>TOTAL</b>	<b>500 points</b>

### **GRADING SCALE**

<b>Total Points</b>	<b>Percentage Points</b>	<b>Grade</b>
450-500	90-100	A
400-449	80-89	B
350-399	70-79	C
300-349	60-69	D
<300	0- 59	F

**Please not that “N” grades are not given for this course.**

### **LEARNING RESOURCES**

**Lab Manual:** Marieb, Mitchell, S.J, and L.A. Smith. 2011. Human Anatomy and Physiology Laboratory Manual. 11<sup>th</sup> Ed (Cat Version). Pearson Benjamin Cummings, San Francisco, CA. (ISBN: 0-321-82119-6)

**Textbook:** Marieb, E.N. and K. Hoehn. 2014. Human Anatomy and Physiology. 8<sup>th</sup> Ed. Pearson/Benjamin Cummings. San Francisco. ISBN: 0-8053-9569-5

many this course. This website contains links to lecture outlines, lab activities, and review materials. All students enrolled in the class are automatically granted access to the course website. You will need a UH email account to access the Laulima site.

\* In addition, many students find it helpful to bring a digital camera and USB flash drive to class in order to photograph anatomical specimens and exchange data files and pictures from the digital microscopes.

## **Additional Information**

### **LAB ATTIRE, CONDUCT, AND HYGEINE**

Because biology labs often involve working with chemicals or hazardous materials, students **MUST** wear close-toed shoes. In addition, some lab activities will require students to wear gloves and safety glasses (provided by the college). Several labs will involve body measurements (e.g., body fat), light exercise, or the placement of electrodes or sensors on the body. Students should therefore wear loose-fitting clothing that allows for a free range of movement (i.e. no tight-fitting pants or jeans). Students failing to dress appropriately for lab will not be permitted to participate in laboratory exercises and will be considered absent. Students engaged in conduct that threatens themselves or others in the lab will be refused access to the lab for the remainder of the semester and receive an "F" grade for the course.

### **LAB SUBJECT POLICY**

Most labs involve non-invasive clinical measurements (e.g., skin-fold measurement, reflex tests, etc). ALL students are required to participate in these activities. If you have a health condition or other reason why you should not participate you should inform the instructor. Experiments involving invasive or semi-invasive procedures (e.g., finger sticks and urinalysis) will be performed on volunteers only.

### **ACADEMIC DISHONESTY**

Students involved in academic dishonesty will receive an "F" grade for the course. Academic dishonesty includes cheating on exams and plagiarism. See the 2013-2014 WCC course catalog for a description of the University's policies concerning academic dishonesty.

### **ACCOMODATION FOR STUDENTS WITH DISABLIITIES**

If you have a physical, sensory, health, cognitive, or mental health disability that could limit your ability to fully participate in this class, you are encouraged to contact the Disability Specialist Counselor to discuss reasonable accommodations that will help you succeed in this class. Ann Lemke can be reached at 235-7448, lemke@hawaii.edu, or you may stop by Hale 'Akoakoa 213 for more information.

## LAB SAFETY RULES

- 1) Be familiar with lab safety procedures and take appropriate precautions at all times to insure the safety of all lab students.
- 2) Follow all instructions carefully, especially when hazardous materials are being used.
- 3) Know the locations of important safety equipment: eyewash, safety shower, fire extinguisher, and first aid kit.
- 4) Report all injuries to the instructor immediately.
- 5) Dress appropriately for lab. Closed-toe shoes are required for ALL labs. Safety glasses and gloves are required for labs utilizing chemicals, bodily fluids, or hot-plates.
- 6) Report any hazardous conditions (e.g. chemical spills or broken glass) to the instructor immediately.
- 7) NO FOOD ALLOWED IN LAB
- 8) Chemicals used in lab may be poisonous, corrosive, or flammable. No chemicals, even those known to be safe, should be ingested or touched with un-gloved hands unless you are specifically directed to do so by your instructor.
- 9) Know how to safely operate all lab equipment and tools (e.g., microscopes, scalpels, and hematology supplies). Safe usage will be demonstrated by your instructor.
- 10) Clean all lab supplies and return them to their proper location before leaving lab.
- 11) Treat all organisms, living or dead, with care and respect. Use gloves when handling dissected specimens.
- 12) Place broken glass, sharps, and dissected specimens in the appropriate receptacles (NOT IN THE TRASH!)
- 13) Unless otherwise instructed, chemical wastes should NOT be disposed of down the drain.
- 14) Human tissues and bodily fluids (e.g., saliva and blood) must be disposed of in appropriate bio-hazard containers (NOT IN THE TRASH!).
- 15) Wash your hands immediately following each lab to reduce the possibility of contamination or infection.

**ZOOLOGY 142L SPRING, 2014**  
 CRN 60121: M 5:30-8:15 PM  
**'Imiloa 103**

<b>Week</b>	<b>Date</b>	<b>Topics</b>	<b>Lab Manual Reading</b>
1	M 1/13	Course Introduction Endocrine System/ Stress Response	Syllabus Exercise 27 Supplement
2	M 1/20	<b>Holiday: Martin Luther King Day</b>	
3	M 1/27	Blood/Hematology*	Exercise 29 Supplement
4	M 2/3	Anatomy of the Heart and Blood Vessels <u>Research Presentation: Blood/Hematology</u>	Exercise 30 Exercise 32
5	M 2/10	Electrocardiography*	Exercise 31
6	M 2/17	<b>Holiday: Presidents Day</b>	None
7	M 2/24	Cardiovascular Physiology* <u>Research Presentation: Electrocardiography</u>	Exercise 33
8	M 3/3	Respiratory Anatomy <u>Research Presentation: Cardiovascular Phys</u>	Exercise 36
9	M 3/10	<b>Lab Practicum #1</b>	
10	M 3/17	Respiratory Physiology*	Exercise 37
11	M 3/24	<b>Spring Break</b>	
12	M 3/31	Digestive Anatomy <u>Research Presentation: Respiratory Physiology</u>	Exercise 38
13	M 4/7	Urinary Anatomy	Exercise 40
14	M 4/14	JABSOM Cadaver Lab (Optional)	TBA
15	M 4/21	Urinalysis*	Exercise 41 Supplement
16	M 4/28	Reproduction and Development <u>Research Presentation: Urinalysis</u>	Exercises 42-44
17	M 5/5	<b>Lab Practicum #2</b>	

- Last day to drop without “W” grade: February 3<sup>rd</sup>
- Last day to Withdraw (“W” entered on transcript): March 20<sup>th</sup>