Zoology 141 Human Anatomy and Physiology

ONLINE
CRN 62035: Asynchronous, Online

INSTRUCTOR: Ross Langston, PhD
OFFICE: Hale ‘Imiloa 104
EMAIL: langston@hawaii.edu
OFFICE HOURS: Via Email
TELEPHONE: 236-9119
EFFECTIVE DATE: Fall, 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
The first semester of a two-semester course in human anatomy and physiology. Topics include: gross anatomy, human embryology, microanatomy, physiology, pathology, and homeostatic relationships. This course is intended for students entering health care or medically related fields such as nursing, physical therapy, and medical technology. (3 hrs. lect)

STUDENT LEARNING OUTCOMES
Upon successful completion of ZOOL 141, the student should be able to:

1. Use the scientific method to design a medical research study.
2. Critically evaluate scientific claims made in primary journal articles and popular literature.
3. Discuss the major chemical elements found in the human body and describe the different ways in which these elements combine to form molecules and compounds.
4. Understand the functions of cellular organelles, and be able to trace the path of protein manufacture in the cell.
5. Compare and contrast the physical, chemical, and biological factors governing the transport of materials across the cell membrane.
6. Discuss the link between cells and tissues and describe how tissue structure determines its suitability for secretion, absorption, support, or protection.
7. Use standard medical terminology to describe body positions and the orientations.
8. Describe the anatomy and function of the integumentary, skeletal, muscular, and nervous systems, and discuss how these systems maintain homeostasis in the human body.
9. Discuss how negative feedback maintains homeostasis in each of the above body systems. Also, be able to explain how disease and disorders disrupt the homeostasis of each of the above body systems and discuss how common medical treatments and drugs are used to restore homeostasis.
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:

- Philosophy and characteristics of science and the scientific method;
- The difference between hypotheses, theories and laws;
- Hierarchical architecture of the human body (cells, tissues, organs, and organ systems);
- The chemical composition of the human body and the functions of the major groups of biological molecules;
- Anatomy and physiology of cells including: protein production, cellular respiration, mitosis, and meiosis, senescence and cell death (apoptosis).
- Anatomy and physiology of the systems that make up the human body, including skeletal, integumentary, muscular, and nervous systems.
- Mechanisms for maintenance of homeostasis in the human body.

COURSE TASKS

1) Complete assigned readings prior to lecture.
2) View weekly online lectures
3) Participate in class discussion assignments.
4) Complete weekly quizzes
5) Complete 3 proctored examinations at an approved UH testing center

ASSESSMENT TASKS AND GRADING

EXAMINATIONS (600 points total-200 points for each exam). The student will take THREE exams (non-cumulative) at the WCC testing center to demonstrate knowledge and understanding of information presented in the lectures, lecture outlines, text readings, and study guide activities. Exams must be taken at the WCC Testing center, or another approved UH location. The exam MUST be completed by 5:00 PM on the day of the deadline. You will need to bring a driver’s license or other approved state ID to the testing center in order to take the exam. They will be timed (typically one minute/question) and may consist of multiple-choice, short answer, or essay questions. You will be allowed to take the exam one time only.

QUIZZES (200 points- 20 points for each quiz). The student will take 12 online quizzes which will cover material from the lecture and reading. Quizzes may be taken from home, but they MUST be taken by the indicated deadline (typically 11:00 PM each Friday). Quizzes cannot be made up for any reason, including network problems (if the quizzes are taken at home). You will be allowed THREE attempts for each quiz. Only the highest grade will be saved. The lowest two quiz grades will be dropped at the end of the semester. As with exams, quizzes will be timed (typically 30 s to 1 min per question, depending on difficulty). Quizzes may be taken open-book, but be warned that if you do not study beforehand you will not be able to complete the quiz before the deadline lapses.
DISCUSSION BOARDS (100 points total- 25 points for each activity). Each student will complete four discussion board assignments on selected topics from the course text. The purpose of these assignments is to facilitate open discussion of course topics between students in the class. For discussion boards, you will be required to post a response based on the guidelines posted by your instructor. You will also be required to read and post responses to at least TWO of the posts from your fellow students. Both your initial post and your responses MUST be completed by the deadline. Be aware that some posts may require you to create informational videos using YouTube. For this reason, a webcam or other digital camera is mandatory for this course. Your posts and responses will be graded based on effort, clarity, and accuracy. The topics and guidelines for each discussion board will be posted on the course website under “Announcements” two weeks before the assignment is due.

METHOD OF GRADING
The assignment of points will be according to the following:

<table>
<thead>
<tr>
<th>Component</th>
<th>Points</th>
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<tbody>
<tr>
<td>Exams</td>
<td>600</td>
</tr>
<tr>
<td>Quizzes</td>
<td>200</td>
</tr>
<tr>
<td>Discussion Boards</td>
<td>100</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>900</strong></td>
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GRADING SCALE

<table>
<thead>
<tr>
<th>Total Points</th>
<th>Percentage Points</th>
<th>Grade</th>
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<tbody>
<tr>
<td>806-900</td>
<td>90-100</td>
<td>A</td>
</tr>
<tr>
<td>716-805</td>
<td>80-89</td>
<td>B</td>
</tr>
<tr>
<td>623-715</td>
<td>70-79</td>
<td>C</td>
</tr>
<tr>
<td>536-622</td>
<td>60-69</td>
<td>D</td>
</tr>
<tr>
<td>&lt;536</td>
<td>0-59</td>
<td>F</td>
</tr>
</tbody>
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Grades may be curved at my discretion; however, you should use the above grading scale to evaluate your performance throughout the class. If you miss an examination because of an illness or legitimate emergency, you must contact me within 48 hours to arrange a time to take a make-up exam. I will request that you present evidence of the illness or emergency that caused you to miss the exam. If you miss an exam for any other reason, you will not be permitted to take a make-up exam, thus failing to receive any points for the missed exam. While make-up exams will cover the same content as a missed exam, the exam format and questions may be different. No retests will be given for any reason. Please also note that “N” grades are not given for this course.

ACADEMIC DISHONESTY
Students involved in academic dishonesty will receive an "F" grade for the course. Academic dishonesty includes cheating on exams and plagiarism. See pages 14-15 of the 2013-2015 course catalog for a description of the College’s policies concerning academic dishonesty.

LEARNING RESOURCES


Zoology 141 Lecture Outlines: Available on the laulima website.
Laulima: [https://laulima.hawaii.edu/portal](https://laulima.hawaii.edu/portal) The laulima website contains links to lecture outlines, narrated lectures, and review materials. Students will need a UH email account and access to a computer to access the Laulima site.

**Additional Information**

**STUDENT RESPONSIBILITIES**
You are expected to attend lectures, participate in all course activities, and complete all examinations and course assignments on time. Please be considerate of other students by turning off any cell phones or beepers during class. Any changes in the course schedule, such as examination dates, deadlines, etc., will be announced ahead of time. It is your responsibility to be informed of these changes. It is also your responsibility to be informed about deadlines critical to making registration changes (e.g., last day for making an official withdrawal).

**HOW TO SUCCEED IN THIS CLASS**
Although you will be given lecture outlines, you will not succeed in this class without viewing the lectures and taking detailed notes on the corresponding material in the textbook. Merely reading the chapter will not suffice. Science courses at WCC generally require a minimum of two to three hours of independent study time for each hour in class. It is your responsibility to allocate the appropriate amount of time needed for study and be realistic about all personal and professional commitments that may cut into your study time.

As part of your studies, you will need to understand a veritable mountain of medical and anatomical terms, most of which will probably be foreign to you (e.g., Sphincter of Oddi, progeria, trabeculae, and post-synaptic potential). Most important vocabulary words appear in boldface throughout your textbook. One way to learn these vocabulary words is to make flash cards to quiz yourself. Answering the matching and fill-in-the-blank questions located in the back of each text chapter can also be a helpful way to learn new vocabulary. Be warned: Merely knowing the definitions of vocabulary words will be of little use if you do not know how the anatomy of the structures they represent.

In addition to vocabulary, you will be expected to have a detailed understanding of the mechanisms regulating human body systems. In many cases, these systems are regulated by negative feedback loops. **Knowledge of negative feedback mechanisms is absolutely crucial to understanding how the human body maintains homeostasis.** For example, you should know how the body maintains optimal blood calcium levels (see chapter 6). To answer this type of question effectively, you will need to develop an intuitive understanding of how the body monitors blood calcium and what actions it takes when blood calcium is too low or too high. One way to do this is to make a diagram of how the feedback loop works (see figure 6.11). Most negative feedback loops have 3 parts. 1) a receptor, which monitors the condition (in this case, blood calcium levels) 2) a control center which “decides” when the condition has exceeded optimal setpoint values 3) and an effector which modifies the values of a controlled condition as directed by the control center. Once you have created your diagram (and labeled the above parts) you should ask yourself what types of stimuli may cause the controlled condition to drop below or exceed the setpoint and then trace the steps necessary to bring the controlled condition back into homeostasis (back to the setpoint).

**My #1 Suggestion for success in this class:** Take weekly quizzes EARLY, even if you have not had a chance to properly study for the quiz. This will prevent you from receiving a “zero” score should you forget to take the quiz by the deadline. It will also help you to better direct your studying so you can do better on future attempts for the same quiz. Remember, only your HIGHEST score is saved for each quiz. *Exams may also be taken early,* but you
will only be able to take each exam once. This means you should study diligently before going to the testing center to take the exam.

**ACCOMODATION FOR STUDENTS WITH DISABILITIES**

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.
# ZOOLOGY 141 (CRN 62035) FALL, 2014

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Topics</th>
<th>Lect</th>
<th>Text</th>
<th>Assignment Due FRIDAY (5 PM for exams; 11 PM for quizzes and DBs)</th>
</tr>
</thead>
</table>
| 1    | F 8/29 | Course Introduction
Orientation to the Human Body                                    | 1    | Syllabus    | None                                                          |
|      |        |                                                                         | 2    | Ch 1        |                                                               |
| 2    | F 9/5  | Chemistry
Important Biological Macromolecules                                | 3    | Ch 2        | Chapter 1 Quiz DB #1                                         |
| 3    | F 9/12 | Intro to the Cell & Membrane Trans
Cellular Organelles and Cell Division                                      | 4    | Ch 3        | Chapter 2 Quiz                                               |
| 4    | F 9/19 | Tissue Level of Organization                                            | 5    | Ch 4        | Chapter 3 Quiz                                               |
| 5    | F 9/26 | The Integumentary System                                                | 6    | Ch 5        | Chapter 4 Quiz                                               |
| 6    | F 10/3 | Bones & Skeletal Tissue                                                 | 7    | Ch 6        | EXAM 1 (CH 1-5)                                              |
| 7    | M 10/10| The Skeleton                                                            | 8    | Ch 7        | Chapter 6 Quiz DB #2                                         |
| 8    | F 10/17| Joints & Joint Movements                                                | 9    | Ch 8        | Chapter 7 Quiz                                               |
| 9    | F 10/24| Muscles & Muscle Tissue                                                 | 10   | Ch 9        | Chapter 8 Quiz                                               |
| 10   | F 10/31| Muscular System                                                         | 11   | Ch 10       | Chapter 9 Quiz                                               |
| 11   | F 11/7 | Fundamentals of the Nervous System & Nervous Tissue                     | 12   | Ch 11       | EXAM 2 (CH 6-10)                                             |
| 12   | F 11/14| Central Nervous System                                                  | 13   | Ch 12       | Chapter 11 Quiz DB #3                                        |
| 13   | F 11/21| Peripheral Nervous System & Reflexes                                    | 15   | Ch 13       | Chapter 12 Quiz                                              |
| 14   | F 11/28| Special Senses                                                          | 17   | Ch 15       | Chapter 13 Quiz                                              |
| 15   | F 12/5 | Autonomic Nervous System                                                | 19   | Ch 14       | Chapter 15 Quiz                                              |
| 16   | TH 12/12| Review                                                                | NA   | NA          | Chapter 14 Quiz DB # 4                                       |

- Last day to drop without “W” grade: 9/15
- Last day to Withdraw (“W” entered on transcript): 10/30
- **Final Exam:** Due by THURSDAY, 12/18 at 5:00 PM