Spring 2016
WINDWARD COMMUNITY COLLEGE

Outline of Course Objectives

Biology 100L (CRN 61278) Human Biology Laboratory

Tuesday 1-3:45
'Imiloa 103

INSTRUCTOR: Michelle Smith
OFFICE: Imiloa 136
OFFICE HOURS: TR 11:30-1
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EFFECTIVE DATE: Spring 2016
Website for Lab Info: http://www.wcc.hawaii.edu/facstaff/miliefsky-m/

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 BIOL 100 (Human Biology). Emphasizes the application of the scientific method, basic laboratory methods and procedures in biology, and facts and principles of human anatomy and physiology. (3 hours laboratory)

Pre-Requisite(s): Credit for or registration in BIOL 100 or equivalent preparation or consent of instructor.

REQUIREMENTS COURSE SATISFIES:

AT WCC: Partially fulfills AA degree Natural Science Lab requirements. This class counts as a biological science lab.

LEARNING RESOURCES

Laboratory Manual for Human Biology: Concepts and Current Issues, 7th Edition. [Spiral bound]. Michael Johnson and Bert Atsma. Benjamin Cummings. ISBN-10: 032187482X; ISBN-13: 978-0321874825
Lab coat or long-sleeved shirt to cover arms and torso. May be purchased at the WCC bookstore.

STUDENT LEARNING OUTCOMES

Upon completion of the course, the student will be able to:

- Use the scientific method of inquiry to investigate biological phenomena.

- Apply the concepts learned in BIOL 100 to an experimental and hands-on observational setting.
- Collect, reduce, and interpret biological data.
- Prepare written objective reports describing and interpreting experimental and observational results.
- Demonstrate the use of some of the standard tools of the biological scientist, such as microscopes, scales, spectrophotometers, computers, and other analytical tools.
- Apply the standard analytical procedures needed to study human biology, such as dissection, separation of biological compounds, microscopic examination of cells and tissues, membrane transport mechanisms, energy metabolism, genetics, digestion and nutrition, excretion, skeletal muscle physiology, cardiovascular function, nervous system function, respiration, and blood analyses.
- Recognize and identify basic human tissue types and their distinguishing characteristics.
- Demonstrate basic knowledge of anatomy (structure) and physiology (function) of the fetal pig (using preserved specimens) and human body (using models and figures).

COURSE CONTENT

Concepts or Topics – The student will describe and integrate basic biological principles and define basic biological terms presented in lecture, the required texts, and other instructional materials, citing specific examples when asked. These principles include the following:

- The scientific method
- The basic biochemistry of life and the function of major biological molecules
- The characteristics of animal, plant, fungal and bacterial cells
- Basic cell metabolism and division
- Basic human genetics and inheritance
- Hierarchical architecture of an animal: molecules, cells, tissues, organs, organ systems, and the whole organism
- Anatomy and physiology of human organ systems including: skeletal, integumentary, muscular, circulatory, digestive, respiratory, excretory, nervous, endocrine, immune, and reproductive systems

Skills or Competencies – Students should be able to do the following in order to complete the student learning outcomes:

1. Keep a lab note book in a standard format
2. Create a lab report based on the scientific method
3. Use the library and/or internet to search for reference material for lab reports
4. List important biochemical molecules and identify their biological function
5. Describe the basic metabolic pathways essential to life (e.g., Kreb's cycle)
6. Describe the process of cell division
7. Describe the basic chemistry of DNA and how it relates to inheritance
8. Describe how a whole organism is composed of parts organized into functional groups
9. Be able to identify, from models, diagrams or other visual materials including dissected specimens, the anatomical names of tissues and organs in the human body
10. Be able to describe, from models, diagrams or other visual materials including dissected specimens, the physiological function of organs, tissues or cells.

11. Use the "tools of the trade" appropriately including microscopes, models, dissection tools, etc.

COURSE TASKS

1. Attend class at scheduled times.
    a. Wear appropriate attire (closed-toed shoes, for instance)
    b. Wear safety equipment as necessary (gloves and safety glasses, for instance)
2. Complete assigned reading(s) prior to lab.
3. Complete weekly worksheets (found in the lab manual at the end of each lab exercise)
4. Participate in laboratory exercises, including:
    a. Making yourself familiar with all lab safety procedures
    b. Know the locations of important safety equipment and the fundamentals of their use including: i. Eyewash stations ii. Safety shower(s) iii. Fire extinguisher(s) iv. First Aid kit(s) v. Who to summon in the event of an accident or emergency
5. Record data and answer questions in lab and in laboratory manual

ASSESSMENT TASKS AND GRADING

LAB PRACTICALS (500 points total-250 points each). The student will take 2 lab practical's (non-cumulative) to demonstrate knowledge and understanding of information presented in the lab activities. The questions may consist of multiple choice, fill in the blank or a word bank, and pertain to: 1) any of the structures in the lab manual, or noted on handouts (referring to anatomical models and dissections); 2) the information related to physiology experiments performed; 3) identification of assigned Slides.

NOTE:

- The last lab practical will be held during the last week of classes, not finals week.
- There are no lab practical makeups

PRELAB QUIZZES (100 points total). A quiz will be given at the beginning of each lab related to that days material. You need to be to lab on time to take it. They will be posted ahead of time on my website.

LAB MANUAL EXERCISES (100 points): Complete all lab manual exercises related to that week's activity to be checked off by the instructor. Lab exercises need to be fully complete for full credit and turned in on time for a total of 200 points.

ASSIGNMENTS (200 points): the following four assignments will require that the student submits a formal lab report. They are worth 50 points each and need to be turned in the following lab.

- **Osmosis**
- **Nutrition**
- **Epidemiology**
- **Urinalysis**

Late Assignments: Late assignments will be accepted up to one week following the due date, but with an automatic point penalty assessed on top of the score received (**5 point deduction** per day late). Essay assignments received more than one week following the due date will not be accepted for grading.

ATTENDANCE (50 points): Attendance is mandatory. If a class is to be missed the Instructor must be notified and as to the reason why. Each unexcused absence will result in a deduction of 5 points from your **total** score.

PARTICIPATION (50 points)**:**
This includes participating in all laboratory activities and working cooperatively within your group. You are also responsible for cleaning up the lab after an activity (e.g., putting specimens away, cleaning equipment you use, and bleaching table after dissecting).

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

Lab Practicals (2)	500 points
Assignments (4)	200 points
Homework	100 points
Attendance	50 points
Participation	50 points
PreLab Quizzes (10)	100 points
TOTAL	**1000 points**

GRADING SCALE

Total Points	**Grade**
900-1000	A
800-899	B
700-799	C
600-699	D
0- 599	F

The student should use the above grading scale to evaluate his or her performance throughout the class. If the student misses an examination because of an illness or legitimate emergency, the student must contact the instructor **within 48 hours** to arrange a time to take a make-up exam. The instructor may request that the student present evidence of the illness or emergency that caused the student to miss the exam. If the student misses an exam for any other reason, the student may be prohibited from taking a make-up exam, thus failing to receive any points for the missed exam. While make-up exams will cover the same content area as a missed exam, the exam format and specific questions may be different. **No retests will be given for any reason.**

ADDITIONAL INFORMATION

ANIMAL DISSECTIONS AND LAB CONDUCT
1. All students will participate in studying animal dissection specimens similar to human organs as well as a whole dissection specimen (may include a fetal pig).
2. All students will take tests, potentially including practical exams, which will include questions from these specimens.
3. Please honor the specimens. Take your time and be respectful. Do not turn animal parts into mystery meat; we are not training hamburger grinders, we want to learn the art of separating (dissecting) tissues.
    a. Always handle dissection specimens with gloves.

b. Wash your hands, even if you have been wearing gloves, after handling dissection specimens.
c. Do not dispose of dissection specimen materials in the trash, only in the Biohazard container provided.

4. You must wear appropriate clothing for lab, this includes:
a. Close-toed shoes. b. Safety equipment such as gloves and eye protection.
5. You must adhere to a strict code of conduct. a. Any student engaging in behavior that threatens the safety of themselves or others in lab will be expelled and receive an "F" grade for the course. b. Any student who willfully disregards biohazard or sharps disposal procedures will receive an "F" for the lab.
6. Know how to safely use and operate all lab equipment and tools including: a. Microscopes b. Glass microscope slides c. Scalpels and other dissection tools d. Safety equipment including eyewashes, showers and First Aid Kit i. Notify the instructor immediately in the event of any accidents including (even minor) cuts. e. Sharps disposal f. Biohazard disposal
7. NO FOOD or BEVERAGES ALLOWED IN THE LAB
a. NO EATING OR DRINKING IS ALLOWED IN THE LAB i. Just in case you missed that: Absolutely no food or drink in the lab LABORATORY MATERIALS
Some of the equipment or specimens that you will be using are very expensive and/or fragile. Please use care with all materials in the laboratory.
CLEAN UP It is your responsibility to thoroughly clean your lab bench at the end of each lab.

1. Put away all lab equipment and supplies
    a. Return microscopes to their proper storage location
    b. File all microscope slides in their appropriate trays
2. Properly dispose of specimens and contaminated paper towels a. Use the container (biohazard or autoclave bag) provided b. DO NOT LEAVE ANY SPECIMEN SCRAPS IN THE SINK OR ON YOUR BENCH! i. Students who leave early or who fail to follow clean up procedures will be docked points for the lab.
3. Wash down the lab bench and properly dispose of towels. 4. Wash your hands thoroughly.

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 and "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., urinalysis) will be performed on volunteers only.

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.

ACADEMIC DISHONESTY

Students involved in academic dishonesty will receive an "F" grade for the course.

Academic dishonesty includes cheating on exams and plagiarism. See page 16 of the 2011-2012 course catalog for a description of the University's policies concerning academic dishonesty

STUDENT RESPONSIBILITIES

The student is expected to attend lectures, participate in all course activities, and complete all examinations and course assignments on time.

The student is expected to be prepared in advance before the attending class. Being prepared

includes the following: having read text materials (e.g., textbook readings, and lecture outlines) assigned for that day's activities and bringing required work materials (e.g., textbook, handouts, writing supplies, etc.) to the session.

Please be considerate to other students by turning off any Cell Phone devices or Beepers during class. If yours does go off, be prepared to make amends to the entire class. The instructor will explain in more detail.

Any changes in the course schedule, such as examination dates, deadlines, etc., will be announced ahead of time on the course website. It is the student's responsibility to be informed of these changes.

It is the student's responsibility to be informed about deadlines critical to making registration changes (e.g., last day of erase period and last day for making an official withdrawal).

The student should understand that "introductory" does not mean "easy". The student should not assume that the lack of science prerequisites for this class ensures a low level of difficulty for this course. While the instructor assumes that students enrolled in BIOL 100 have little or no science background, the student should expect a level of difficulty comparable to other 100-level science classes. When difficult concepts and detailed information are presented, it is the student's responsibility to take the appropriate steps to learn and understand these concepts and information.

Science courses generally require two to three hours of independent private study time for each hour in class (depends upon the student's science background). It is the student's responsibility to allocate the appropriate time needed for study in an environment conducive to quality study. The student must budget time efficiently and be realistic about all personal and professional commitments that consume time.

WITHDRAWAL POLICY

NATURAL SCIENCES DEPARTMENT POLICY ON WITHDRAWALS (W GRADES) AND INCOMPLETE (I GRADE):

1. WITHDRAWALS (W GRADES) – After the "last day of withdrawals" October 30, 2014 the instructor will sign withdrawals only in cases of extreme or unusual circumstances. Grade related excuses are unacceptable.
   Examples of extreme or unusual circumstances are:
   1. a certified medical reason
   2. a death in the immediate family

   Students who no longer attend class and who DO NOT OFFICIALLY WITHDRAW from the course will receive "F" grades.

2. INCOMPLETE (I GRADE) – Students must present the "Request for Incomplete" form prior to the last day of instruction. "I" grades will be given only to students who are achieving passing grades and are very close to completing the course. In addition, the student must have a very good reason for not being able to complete all the work on time.
   Examples of good reasons are the same as those listed under the withdrawal policy above.

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.

TWO-WAY COMMUNICATION DEVICES

These devices are not allowed in the classroom. Please see to it that these devices are turned off while in class.

UH POLICY ON EMAIL COMMUNICATION

The electronic communications policy adopted in December 2005 establishes the University of Hawai'i Internet service as an official medium for communication among students, faculty, and staff. Every member of the system has a hawaii.edu address, and the associated username and password provide access to essential Web announcements and email. You are hereby informed of the need to regularly log in to UH email and Web services for announcements and personal mail. Failing to do so will mean missing critical information from academic and program advisors, instructors, registration and business office staff, classmates, student organizations, and others.