

Spring 2017
WINDWARD COMMUNITY COLLEGE
Outline of Course Objectives
Biology 100 (CRN 64051) Human Biology
TR 8:30-9:45
'Imiloa 123

INSTRUCTOR: Michelle Smith

OFFICE: Imiloa 136

OFFICE HOURS: TR 9:45-11:30

EMAIL: miliefisk@hawaii.edu

EFFECTIVE DATE: Spring 2017

FOR POWERPOINT LECTURES: <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

Introduction to the structure and function of cells, tissues, organs, and organ systems of the human body. Topics include physical fitness, nutrition, health, and disease. Not intended for science majors. Students who have received credit for ZOOL 101 may not receive credit for BIOL 100. (3 hrs. lect)

Activities Required at Scheduled Times Other than Class Times: Watch online videos

REQUIREMENTS COURSE SATISFIES:

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

AT UHM: Partially fulfills Natural Sciences area requirement for the UHM General Education Core and for the Colleges of Arts and Sciences. At UHM, this lecture class is included in Natural Sciences Group 1, Biological Sciences.

S-FOCUSED: This BIOL 100 class section is S-focused, meaning that content will focus primarily on sustainability from within a given academic discipline and/or the course will examine an issue or topic using sustainability as a lens. For more information please visit: https://windward.hawaii.edu/Committees/Sustainability_Curriculum/

PREREQUISITES: Grade of C or higher in ENG 21, or placement in ENG 100, or consent of instructor.

LEARNING RESOURCES

Required:

Textbook: Johnson, M.D., 2017. Human Biology: Concepts and Current Issues. Eighth Edition. San Francisco, CA: Pearson Benjamin Cummings. ISBN: 978-0-13404243-5

STUDENT LEARNING OUTCOMES

The student learning outcomes for the course are:

1. Be able to use the scientific method to answer scientific questions.
2. 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.
3. Understand the functions of cellular organelles, and be able to trace the path of protein manufacture in the cell.
4. Compare and contrast the physical, chemical, and biological factors governing the transport materials across the cell membrane.
5. Discuss the link between cells and tissues and describe how tissue structure determines its suitability for secretion, absorption, support, or protection.
6. Describe the anatomy and function of the major organ systems of the human body.
7. 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.

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, citing specific examples when asked for. These principles include the following areas:

- Philosophy and characteristics of science and the scientific method
- Characteristics of living things and how living things differ from inanimate objects
- Chemical architecture of living things and the functions of the major groups of biological molecules
- Animal cells: the functions of their parts, how animal cells differ from plant and prokaryotic cells, cell metabolism and cell division
- Genetics and inheritance
- Human evolution, its mechanisms and history;
- Human nutritional requirements and the role of nutrition and fitness in human health
- Hierarchical architecture of the human body: molecules, cells, tissues, organs, organ systems, and whole organism;
- Anatomy and physiology of the systems that make up the human body, including skeletal, integumentary, muscular, circulatory, digestive, respiratory, excretory, nervous, endocrine, immune, and reproductive systems.

MODE OF INSTRUCTION

The previously described topics will be presented through the aid of the following activities:

- assigned text readings
- class lectures and demonstrations
- internet resources
- examinations

Lecture Approach will include:

Verbal presentation: The lecture format is provided using PowerPoint slides. The slides are available for printing or saving to your hard drive. They can be downloaded from: www.wcc.hawaii.edu/facstaff/miliefsky-m/. Select the BIOL 100 folder. Prior to attending class, it is recommended that you print out the corresponding PowerPoint lecture. You may choose to print 3 or 6 slides per page, leaving enough room to take notes. You will find it easier to follow along if you bring the printouts to class with you.

ASSESSMENT TASKS AND GRADING

Exams (400 points total-200 each) knowledge and understanding of information presented in the lectures, lecture outlines, text readings, and study guide activities. Exam 1 will be placed in the testing center. However, the final will take place in the lecture room. You are allowed to bring in one 8x11 inch note sheet, both sides. The note sheet needs to be handed to the testing center assistant before you leave.

Quizzes (200 points total-20 points each). The student will take 10 quizzes (non-cumulative) at <http://www.MasteringBiology.com>. You will need to purchase Mastering Biology at: <http://www.masteringbiology.com/>. This site is also where you register for Mastering Biology.

ATTENDANCE: 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 **10 points** from your **total** score, up to 100 points maximum deduction.

ASSIGNMENTS (400 points):

Reaction Papers/Discussion (100 pts each)

TOPICS: Stem cells, GMO, VOG, Sustainability

Article-based Reaction papers (100 points each): four article-based reaction papers will be given at various times throughout the semester. They are each worth **400 points** toward your final grade and include a brief discussion in class. Participation is required to receive full credit.

Review recent article of your choice related to each one of the topics listed below. The article should come from a legitimate journal (e.g., JAMA, Discover magazine, National Geographic, local paper...), not a website, factsheet or Wikipedia. Internet journals are O.K. to use.

The report should be minimum of 2 full pages in length (2-3 pages is good). When you type your paper, please use size 12 font, Arial or Times New Roman, and double space it. Attach the article to your paper (photocopy or cut it out). Do not use more than 10% quotes. In addition, please don't mail me your paper or the website because you ran out of paper.

TOPIC 1: Stem Cells—

Stem cells have the potential to develop into various tissues in our body. Research in this area suggests that stem cells may be useful in curing various disorders. However, the use of embryonic stem cells is controversial. Find an article related to the uses and benefits of stem cells, the ethical concerns, or funding provided by the federal government. Here is a web site you may find useful for background information: <http://stemcells.nih.gov/index.asp>.

TOPIC 2: The effect of VOG on human health—

Living on a tropical island such as ours poses many benefits, e.g., beautiful beaches, coral reefs, and a lush tropical landscape. Industrial pollution is minimal and we have some of the cleanest freshwater anywhere. However, there are dangers to our health that are produced by

islands with active volcanoes. Kilauea and Mauna Loa, on the Big Island, are still active, with Kilauea constantly erupting. The volcanic emissions pose health concerns. Find an article related to Volcanic Smog (VOG) and its risk to human health.

TOPIC 3: Genetically Modified Organisms (GMO)--

GOMs are organisms that have been modified to benefit humanity. This technology offers pest resistance in plants and animals that biochemically make medicine. However, environmental activists, public interest groups, other scientists and government officials have all raised concerns about GM product safety. Where does the truth lie? Please reflect on the nature of GMOs.

TOPIC 4: Sustainability- it is to use resources without depleting or permanently damaging them. One needs to consider the impact of humans on the environment, with emphasis on the major environmental issues facing the health and survival of the present generation, including pollution, global warming, ozone depletion, the biodiversity crisis, acid deposition, and the desertification of once fertile lands.

The following quotes have been used to describe sustainability in the context of environmental management: "the solution to pollution is dilution", "we all live downstream". Please find examples and ways to remediate the issue.

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.

EXTRA CREDIT ASSIGNMENTS

There are four extra credit assignments worth up to 5 percentage points for each exam. Each assignment is to be turned in on the day of the exam. They can be turned in early, but late submissions will not be accepted. For instance, if you received an 85% on an exam and 5 points on the extra credit. You now have a 90%.

ASSIGNMENT: Review a scientific/medical article related to class content. The article may be from any **scientifically reputable** periodical or publication (e.g., Discover, Time, Newsweek). Legitimate online sites such as cnn.com or newsweek.com are acceptable, but not Bob's diabetes website. Ask your instructor if you are unsure which types of publications are acceptable. Write a 1-2 page **summary-reaction paper**, typed, double spaced, size 12 font. Attach article to paper (photocopy it or cut it out).

METHOD OF GRADING

The assignment of points will be according to the following:

| | |
|---------------------------|--------------------|
| Exams (2) | 400 points |
| Reaction Paper/Discussion | 400 points |
| Quizzes (10) | 200 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.**

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.

HOW TO SUCCEED IN THIS CLASS

Understanding biological science involves understanding many difficult concepts and vocabulary, not just knowing facts. The student should know that the details to these concepts are important. In addition, the student will be introduced to hundreds of new words. In some cases, words that are familiar in a context other than biology will be introduced in the context of biology. The student will need to understand and use these terms in a biological science context.

While the student will have lecture outlines, the student will not succeed in this class without taking careful **lecture notes** and **reading** the corresponding material in the textbook before and after the lecture. The student should carefully **review** these lecture notes as often as possible. In addition, the students' study activities should include: **drawing** labeled diagrams or graphs that illustrate important biological phenomena (e.g., the internal structure of the cell, the stages of cell division, or the anatomy of the heart), reviewing all of the **internet** resource materials provided, and making **flashcards** for each new vocabulary word presented (refer to lecture outlines for a lists of required terms). On one side of the card, write the word. On the other side, write the appropriate biological science definition for the word. The student should use these card for self-testing as often as possible.

The textbook and the lecture outlines include useful **study questions**. The student should write out answers to all of these questions as though they were required assignments. Students could exchange these answers and provide constructive feedback to each other.

Students are recommended to establish **study groups** and study together. The students in these

groups may test each other's knowledge and understanding of the information. They may also take turns teaching each other.

The student should **ask** the instructor to explain the things that the student does not understand.

Don't wait until the last minute to carry out the written assignments.

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.