

Windward Community College  
**Outline of Course Objectives**  
**BIOL 124 (CRN 60426) Environment & Ecology**  
Fall 2015  
TR 11:30-12:45  
'Imiloa 123

**INSTRUCTOR:** Michelle Smith  
**OFFICE:** Imiloa 136  
**OFFICE HOURS:** MTWR 11-11:30  
**EMAIL:** miliefsk@hawaii.edu  
**CREDITS:** 3 (3 hours lecture)  
**INSTRUCTOR'S WEB PAGE 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**

A study of human ecology through the analysis of the interrelationships between science and technology, the means these provide for manipulation of environment and the effects of this manipulation on the environment and on human populations. Lecture course designed for non-science majors. (3 hrs. lect.)

#### **REQUIREMENTS COURSE SATISFIES:**

**AT WCC:** Partially fulfills AA degree Natural Science requirements. This class counts as a biological science. This is an introductory biological science course designed for non-science majors seeking to fulfill part of their science core requirement. Its objective is to broaden an understanding of scientific activities.

**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.

**AT UHWO:** Partially fulfills Natural Sciences (NS) area requirement for the UHWO General Education.

**PREREQUISITES:** None

#### **COURSE CONTENT & TOPICS:**

Science as a Way of Knowing  
Environmental Economics  
The Scope and of Environmental Science  
Evolution and Biodiversity  
Human Populations  
Biodiversity and Conservation Biology

Chemical Principles  
Environmental Policy  
Energy and Life  
Basic Ecological Principles  
Soil and Agriculture  
Forests and Parks

Environmental Health and Toxicology  
Watersheds and Freshwater Resources  
Marine and Coastal Systems  
Global Climate Change  
Renewable Energy Alternatives  
Cities and Urbanization

Geologic Resources  
Water Pollution  
The Atmosphere and Air Pollution  
Nonrenewable Energy Sources  
Waste Management

## LEARNING RESOURCES

### REQUIRED TEXT:

Withgott, J., and S. Brennan. 2015. Essential environment: the science behind the stories with Mastering Environmental Science 4/e. 5<sup>th</sup> Edition. Benjamin Cummings. San Francisco. ISBN-10: 0321984579, ISBN-13: 978032198457-9

### Options:

Purchase Text with Mastering at bookstore or at Pearson Pub  
(<http://www.mypearsonstore.com/index.asp>)

The text comes in other forms, as an etext with a 2-year subscription or ala cart (3-ring binder edition) available at Pearson Pub. (go to [mypearsonstore.com](http://mypearsonstore.com)).

An etext version that you could download to a computer, laptop or ipad is on coursesmart.com's website:

<http://www.coursesmart.com/essential-environment-the-science-behind/jay-withgott-matthew-laposata/dp/9780321753199>. However, for an ipad, you need a flash enabler for purchase at itunes or other sites.

Purchase Mastering Environmental Science 4/e separately at:

<http://www.masteringenvironmentalscience.com/>. This site is also where you register for Mastering.

PowerPoint slides, and other resources will be made available at the course web site: [www.wcc.hawaii.edu/facstaff/miliefsky-m/](http://www.wcc.hawaii.edu/facstaff/miliefsky-m/).

## STUDENT LEARNING OUTCOMES

### *By the end of this class, the student should be able to*

1. Explain the process and philosophical basis of scientific inquiry.
2. Describe the basic principles of ecology, including population ecology, community ecology, and ecosystem function.
3. Describe the characteristics of the major biomes and ecosystems of the Earth.
4. Describe the interrelationships between land, sea, the atmosphere and the living things that occupy these environments.
5. Discuss the role that humans play in affecting the characteristics of the environment.
6. Evaluate current environmental issues and problems including the solutions and management practices that have been used or offered to address these issues and problems.

## MODE OF INSTRUCTION

The previously described objectives will be achieved through the aid of the following learning activities:

1. Assigned readings
2. Class lecture and videos
3. Web page resources

The material presented in all modes of instruction will be of an introductory nature but sufficient

in content to allow serious study by the interested student. Assigned readings will serve to provide background. Class lectures will build upon this base, helping to focus the student to some of the more important details.

## ASSESSMENT TASKS AND GRADING

**ATTENDANCE** (100 points): Attendance is mandatory. If a class is to be missed the Instructor must be notified and as to the reason why. Attendance is worth 100 points toward your final grade. Each unexcused absence will result in a deduction of 10 points.

**HOMEWORK** (100 points): You need to be registered for Mastering Environmental Science 4/e at <http://www.masteringenvironmentalscience.com/>. Homework assignments will be based on each chapter.

**Article-based Reaction papers** (200 points): Two article-based reaction papers will be given at various times throughout the semester. They are each worth **150 points** toward your final grade and include a brief discussion in class. Participation is required to receive full credit.

Review an 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. Internet journals are O.K. to use.

The report should be minimum of 2 full pages in length (2-3 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). Please don't mail me the web site because you ran out of paper.

### **TOPIC 1:** Threats to Biodiversity in Hawaii—

As a resident or visitor to the islands, perhaps with cultural ties to the islands, it is time to tackle the big problems. Please address some or all of the following questions in your reaction paper: Why does Hawaii have such high biodiversity and endemism as compared to the mainland? What effects do exotic species have on our islands? What effect does pollution play locally to the terrestrial or marine environment? Islands like Kiribati and Tuvalu are in immediate danger from sea level rise. The people will soon have to evacuate and immigrate elsewhere. Can Hawaii survive threats from global warming and sea level rise? What are some potential consequences to animals or plants living near the shore the shore or in the water?

### **TOPIC 2:** The effect of VOG in Hawaii—

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 and economy 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 or to the environment.

**EXAMINATIONS.** The student will take four non-cumulative examinations worth **150 points** each to demonstrate understanding of information presented during lectures, videos and assigned readings. These examinations will be administered during a scheduled class session (see course syllabus). Exams are closed book, but the student is allowed a **1-sided 3x5" note card**. Note cards that are double-sided will be thrown out and those larger than 3x5 will be cut down to size. **NO RETESTS** will be given. A student missing an examination because of an illness or legitimate emergency may take a make-up exam only during the **FIRST** class meeting to which the student returns. In such a circumstance, the student should make every

reasonable attempt to contact the instructor before the exam is administered to the class (or as soon as possible). While make-up exams will cover the same content area as a missed exam, the exam format and specific questions may be different.

### EXTRA CREDIT ASSIGNMENTS

There are four assignments worth up to 5 percentage points for each assignment. 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%.

1. Attend a lecture at Waikiki Aquarium, Hanauma Bay Education Center, participate in a beach or algae cleanup... or
2. Review an article related to class content (e.g., Discover magazine, National Geographic, local paper...). Online internet articles are O.K.
3. Write a 1 page summary-reaction paper, typed, double spaced, size 12 font. Attach article to your paper (photocopy or cut it out).

ASSIGNMENT: Review a scientific 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 nationalgeographic.com or newsweek.com are acceptable, but not Bob's marine biology 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:

Reaction Papers (2)	200 points
Exams(4)	600 points
Homework	100 points
Attendance	100 points
<b>TOTAL</b>	<b>1000 points</b>

Letter grades will be assigned as follows:

#### Grading Scale:

Total Points	Grade
100-90%	A
89-80%	B
79-70%	C
69-60%	D
59- 0%	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

Students are expected to be prepared in advance when they arrive to class. Being prepared includes the following: having already read text materials (e.g., lecture notes, textbook readings and handouts) assigned for that day's activities; and bringing required work materials (e.g., textbook, handouts, writing supplies, etc.).

Any changes in the course schedule, such as examination dates, deadlines, etc., will be announced ahead of time in class. 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).

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.

The student should understand that **"INTRODUCTORY" DOES NOT MEAN "EASY"**. The student should not assume that the lack of prerequisites for this class ensures a low level of difficulty for this course. While the instructor assumes that students enrolled in BIOL 124 have little or no science backgrounds, the students 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 at UH 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.

## 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 and 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: reviewing all of the **internet** resource materials provided, and making **flashcards** for each new vocabulary word presented. 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. Flashcards are available on the Mastering Environmental Science website.

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.

Other reading materials may be handed out in class, placed on reserve in the library, or accessed from web pages.

### **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](mailto: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.