BIOL 124 L Environment and Ecology
1 credit
Monday 1 – 3:45 pm

INSTRUCTOR: Erin Yafuso
OFFICE: Imiloa 118
OFFICE HOURS: Monday 3:45 – 4:45 pm (or by apt.)
TELEPHONE: 236-7119
EFFECTIVE DATE: Spring 2015

WINDWARD COMMUNITY COLLEGE MISSION STATEMENT

Windward Community College is committed to excellence in the liberal arts and career development; we support and challenge individuals to develop skills, fulfill their potential, enrich their lives, and become contributing, culturally aware members of our community.

CATALOG DESCRIPTION

Companion laboratory class to BIOL 124, Environment and Ecology. This class, providing hands-on experience in the laboratory and in the field, enhances the student’s understanding of basic environmental science and ecological concepts presented in BIOL 124. (3 hours laboratory)
Prerequisite: Credit for or registration in BIOL 124 or consent of instructor.

STUDENT LEARNING OUTCOMES

The student learning outcomes for the course:

1. Use the scientific method of inquiry to investigate environmental phenomena.
2. Apply the concepts learned in BIOL 124 to an experimental and hands-on observational setting.
3. Collect, reduce, and interpret biological data.
4. Prepare written objective reports describing and interpreting experimental and observational results.
5. Demonstrate the use of some of the standard tools of the environmental scientist, such as microscopes, scales, spectrophotometers, various environmental meters, and basic statistical procedures.
6. Apply the standard analytical procedures needed to study the environment, such as soil analyses, water quality determinations, stream bioassessments, and quantitative resource inventories.
7. Conduct experiments that evaluate how environmental factors affect living organisms.
COURSE CONTENT

Concepts or Topics
- Humans, environment, and sustainability
- Scientific method, chemical properties, systems
- Biological diversity at three levels
- Species interaction and interrelations (populations)
- Climate and influence on biological communities and future
- Conservation
- Natural resources: water and soils
- Pollution

Skills or Competencies
- Come prepared to class, participate, answer questions on worksheets, and summarize laboratory exercises.
- Record data and summarize in the form of graphs, tables or figures.
- Use scientific style of writing.
- Learn to use scientific equipment: compound or dissecting microscope, scales, graduated cylinders etc.
- Experiments to investigate how environmental factors affect biota
- Water quality assessments

COURSE TASKS

Lab Exercises:
Keep laboratory exercises in a three ring binder include: drawings / labeling, answers to questions (complete sentences), and typed summaries. Field trips represent an outdoor laboratory and transportation is the sole responsibility of the student. Laboratory exercises are generally worth 15 pt. each but three labs will be worth 20 points, worth a total of 225 points.

- Summaries are to be written in the scientific style of writing and may include figures / labeled drawings, graphs or tables, and answers to questions.

Students must be present in class in order to receive points for the scheduled laboratory exercises; there are no make-ups for laboratory exercises.

Micro-hydroponics:
Micro-hydroponic is an assignment that will span the duration of the semester. It will be the responsibility of the student to take care of their plants and to record observations (written and pictures) to show progress. A short written report should include: introduction, objective, methods and materials, data / results, and conclusion, worth 75 points.

Examination:
There is one exam at the end of the course to evaluate the use of microscopes, observation, interpretation of data collection of similar laboratory exercises, species identification, and important terminology used throughout the course, worth 100 points.
ASSESSMENT TASKS AND GRADING

<table>
<thead>
<tr>
<th>Tasks</th>
<th>Possible Points</th>
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<tbody>
<tr>
<td>Lab exercise</td>
<td>225</td>
</tr>
<tr>
<td>Micro-hydroponics</td>
<td>75</td>
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<tr>
<td>Final exam</td>
<td>100</td>
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Total possible points: 400

Extra credit will be offered, but cannot exceed 5% of the total available points.

Grading
Grading is based on the percentage of total points earned.

A 90 – 100%
B 80 - 89%
C 70 - 79%
D 60 - 69%
F 0 - 59%

LEARNING RESOURCES

– Specific chapters

Additional Information

- Students must be able to access Laulima via the Internet for this course.
- Video and voice recordings are prohibited in this class.
- Transportation to field trips is the sole responsibility of the student.
- Regarding concerns or questions (i.e. exam) send the instructor a formal email stating the concern or question; all concerns will be considered followed by a reply.

DISABILITIES ACCOMMODATION STATEMENT

*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.*
**Syllabus**  
**BIOL 124 L**

<table>
<thead>
<tr>
<th>Date / Monday</th>
<th>Topic</th>
<th>Lab</th>
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<tbody>
<tr>
<td>1/12</td>
<td>Intro. to Lab</td>
<td>Lab 1</td>
</tr>
<tr>
<td>1/19</td>
<td>1/19 – Martin Luther King Day</td>
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<tr>
<td>1/26</td>
<td>Native Hawaiian Food Web</td>
<td>Lab 5 (modified)</td>
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<tr>
<td>2/2</td>
<td>Population and keystone species</td>
<td>Lab 3</td>
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| 2/9           | Aquatic Biodiversity  
Field trip: Sea Life Park | Species identification |
| 2/16 – Presidents Day | |
| 2/23          | Wild Europe (Climate)  
Conservation and Hawaii | Handouts |
| 3/2           | Hydroponics | Project |
| 3/9           | Health Risk Assessment  
Intro. to Biotechnology | Handout |
| 3/16          | HI Fresh Water Resource and Fresh Water Biota; Rain Garden | Handout |
| 3/23 – Spring Recess | |
| 3/30          | Field Trip: Waihee Tunnel | Handout |
| 4/6           | Oil Spill Lab  
Hawaii Volcano | Handout |
| 4/13          | Water Quality: Chlorine  
Kea‘ahala stream map and pollution | Lab 12 |
| 4/20          | Hawaii soils and decomposition | Lab 10 & 11 |
| 4/27          | Climate disruption / Ocean Acidification and plankton | Handout |
| 5/4           | Sustainability Future | Lab 21 |
| 5/11          | Exam (1 – 3 pm) | |

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