BOT 130, BOT 130-L  
Plants in the Hawaiian Environment  
4 Credits  
MW 10:30am - 12:45pm

INSTRUCTOR:  David Cole  
EMAIL:  dmcole@hawaii.edu  
OFFICE:  Imiloa 136  
OFFICE HOURS:  Wednesdays 1:00 – 2:00 pm  
TELEPHONE:  236-9125 (office)  
EFFECTIVE DATE:  Fall 2008

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

Introduction to the evolution of plant communities and species of Hawaiian ecosystems; ecological interactions; observations, identification and systematics of native and introduced flora. Lecture/laboratory/field trip course. (3 hrs. lect.; 3 hrs. lab.)

Activities Required at Scheduled Times Other than Class Times

Two Saturday morning field trips (replacing one regular lab/class each)

STUDENT LEARNING OUTCOMES

The student learning outcomes for the course are:

1. Discuss geological history of the Hawaiian Islands and natural history of plants in Hawaii

2. Discuss the arrival, establishment, major evolutionary trends and adaptive radiation of some of the surviving native species

3. Discuss natural and human-mediated changes in the ecosystems, plant succession, and interaction between native and introduced species of plants

4. Discuss botanical terminology for use in identifying native Hawaiian plants
COURSE CONTENT

Concepts or Topics

- Discuss groups of plants associated with coastal and dry to wet forest habitats in Hawaii; learn about various locations throughout the islands where relicts of these plant communities are still preserved
- Learn about basic plant anatomy including functions of structures and their adaptive ecological evolution
- Evolution in Hawaiian ecosystems: involving the role of volcanism, dispersal, plant-animal interactions and variations of rainfall (climate)
- Discuss techniques used to investigate prehistoric Hawaiian plant communities and the role of humans and the organisms they introduced in altering the landscape (in both the past and present-day)

Skills or Competencies

1. Given background knowledge of a plant specimen’s origin, growth habit and other defining characteristics, be able to identify its scientific and Hawaiian names
2. Use basic taxonomic characters to differentiate between related species & genera
3. Use dissecting microscope to view flower parts and discern the relationship between form and function of individual parts
4. Be able to identify locations in the Hawaiian Islands where various native plant communities are still relatively intact
5. Understand the role of the Pacific tradewinds in shaping the distribution of plant communities in Hawaii

COURSE TASKS AND GRADING

Class Discussion / Participation:

Asking questions and participating in class will be worth 10% of your grade for the course. For extra credit I’ll be calling on students randomly at the beginning of class on Wednesdays to answer questions dealing with that week’s reading assignment.

Field Trips:

You’ll need to answer an assigned list of questions dealing with things we’ll learn on each field trip. There will be four trips throughout the semester (including the Saturday trip). Since you won’t have these questions available to you ahead of time, you’ll need to take notes while on these trips. Completing three out of four of these field trip assignments will be worth 20% of your grade (and you can’t turn them in if you happen to miss a trip). Do all four assignments for extra credit. ON ALL ASSIGNMENTS TURNED IN LATE YOU WILL LOSE ONE LETTER GRADE PER DAY. NO EXCEPTIONS.
Research Report:

Each student is expected to write a research paper 3 to 5 typewritten pages in length (double spaced) - the research topic should be discussed with me by October 15th. You’ll also have to give a 10 minute presentation of your paper in front of the class at the end of the semester. The report, including bibliography (minimum of five sources), must be submitted to me in order to receive a complete grade for the course. The paper and presentation together will account for 20% of your grade- skip your presentation you lose 10%. And as with field trip assignments you’ll lose one letter grade for each day the paper is late.

Tests:

Two midterms will be worth 10% of your grade each and the Final is worth 20%. In addition, there will be one plant identification test worth 10% of your grade.

Midterm and final exam make-ups permitted only when there is a legitimate excuse (such as illness or emergency; doctor’s note required). No make-up will be offered on the plant ID test.

REQUIRED TEXTBOOKS


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.
<table>
<thead>
<tr>
<th>WEEK</th>
<th>DATES</th>
<th>READING ASSIGNMENT</th>
<th>TOPICS DISCUSED</th>
<th>MOVIE / FIELDTRIP</th>
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<tbody>
<tr>
<td>1</td>
<td>M 8-25 W 8-27</td>
<td>Chapter 1 pp. 1-62</td>
<td>The Hawaiian Setting: Geological History</td>
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<tr>
<td></td>
<td>M 8-27 W 8-24</td>
<td>Chapter 2 pp. 63-80</td>
<td>The Hawaiian Setting: Climate</td>
<td>Hawaii: born of fire. 60 min.</td>
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<tr>
<td>2</td>
<td>M OFF W 9-03</td>
<td>Chapters 3 – 4 pp. 81-121</td>
<td>Hawaiian Biological Phenomena: Dispersal to Island Environment</td>
<td>Rivers of fire: an eruption of Hawaii’s Mauna Loa Volcano. 21 min.</td>
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<td>3</td>
<td>M 9-08 W 9-10</td>
<td>Chapters 5 – 6 pp. 122-156</td>
<td>Hawaiian Biological Phenomena: Adaptations to Island Environment</td>
<td>Strangers in paradise. 60 min.</td>
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<td>4</td>
<td>M 9-15 W 9-17</td>
<td>Chapters 7 – 9 pp. 157-179</td>
<td>Hawaiian Biological Phenomena: Adaptations to Island Environment</td>
<td>Islands w/n islands w/n islands. 50 min.</td>
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<td>5</td>
<td>M 9-22 W 9-24</td>
<td>Supplemental readings</td>
<td>Midterm 1 (Monday) Basic Taxonomy (Wednesday)</td>
<td>Pelekunu: valley of the gods. 30 min. Succession on lava. 14 min.</td>
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<td>6</td>
<td>M 9-29 W 10-01</td>
<td>Chapters 10 – 11 pp. 180-221</td>
<td>Special Hawaiian Groups: Birds and Bugs and Snails</td>
<td>Waimanu. 60 min.</td>
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<td>7</td>
<td>M 10-06 W 10-08</td>
<td>Chapters 12 – 13 pp. 222-266</td>
<td>Special Hawaiian Groups: Lobelioids and Silverswords</td>
<td>Adaptive radiation of the silversword alliance. 26 min.</td>
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<td>M 10-20 W 10-22</td>
<td>Chapters 16 – 18 pp. 300-357</td>
<td>Hawaiian Plant Communities: Wet Forest and Bogs</td>
<td>FIELD TRIP: (Wednesday) Hui Kū Maoli Ola</td>
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<td>10</td>
<td>M 11-03 W 11-05</td>
<td>Monday Class Canceled</td>
<td>Midterm 2 (Wednesday)</td>
<td>Living jewels: the rare plants of Hawaii. 23 min.</td>
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<td>11</td>
<td>M 11-10 W 11-12</td>
<td>Plant ID review (Monday) Plant ID test (Wednesday)</td>
<td>Optional Saturday Field Trip for Extra Credit (Location TBA)</td>
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<tr>
<td>12</td>
<td>M 11-17 W 11-19</td>
<td>Supplemental readings</td>
<td>Human Impacts on Hawaiian Landscape; Past and Present</td>
<td>People of the land. 13 min. Miconia threatens Maui. 25 min. Saving Kahu kū. 11 min.</td>
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<td>13</td>
<td>M 11-24 W 11-26</td>
<td>Class Presentations</td>
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<td>14</td>
<td>M 12-01 W 12-03</td>
<td>Class Presentations and Review for Final</td>
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