WINDWARD COMMUNITY COLLEGE MISSION STATEMENT

Windward Community College offers innovative programs in the arts and sciences and opportunities to gain knowledge and understanding of Hawaii 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 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 hours lecture, 3 hours laboratory).

Activities Required at Scheduled Times Other than Class Times
- Saturday morning field trips (each field trip replaces one regular lab/class)
- Preparation for class! Read assigned chapters or hand outs before class
- Form groups and develop projects based on your interests.

REQUIREMENT COURSE SATISFIES:
AT WCC: (http://windward.hawaii.edu/Courses/BOT130/)
- Associate in Arts - Biological Sciences (DB)
- Associate in Arts - Natural Sciences Lab (DY)
- CA Agripharmatech: Ethnopharmacognosy (Elective)
  (http://windward.hawaii.edu/Academics/Agripharmatech_CA/)

STUDENT LEARNING OUTCOMES

The student learning outcomes for the course are:
1) Discuss geological history of the 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 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 ecosystems: involving the role of volcanism, dispersal, plant-animal interactions and variations of rainfall (climate)
- Discuss techniques used to investigate prehistoric 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. Be able to identify locations in the Hawaiian Islands where various native plant communities are still relatively intact.
4. Understand the role of the Pacific trade winds in shaping the distribution of plant communities in Hawaii.

COURSE TASKS

Our class will incorporate presentations, discussion, videos, field trips, guest speaker(s), projects and presentations with service learning as an option.

Field Trips

Our field trips will be on specified class days and some Saturdays throughout the semester and are designed to enhance your learning of plants that are found in distinct Hawaiian environments. Field trip exercises will be developed for each excursion that will give focus to the specific environments and the plants as well as their ecological and evolutionary interactions/roles. I highly recommend you bring a cell phone or camera to capture images and video. Guidelines for field trip write ups include video options and will be discussed in class.

Attendance and participation during class and field trips is essential for learning Native plants.

Transportation to field trips is the responsibility of the student.

Projects

Student projects are part of our course and will be discussed in class. I encourage you to come to class with ideas on what you want to master and we will discuss projects right away. I encourage you to create photographs and/or movies that you can use in the presentation of your projects.

PROJECT 1

Choose one native Hawaiian plant (endemic or indigenous) and tell the story of the plant including scientific and cultural information. Describe briefly the living and non-living components of its ecosystem. What are the basic geology and environmental characteristics of the ecosystem?

Lobeloid, Silversword, Ohia species or other native plant (endemic or indigenous) Hawaiian Plant

- What are the family characteristics of the species you choose?
- What characterizes the plant in terms of its vegetative and reproductive characters?
• Who or what pollinates you plant?
• How have (and/or do) Hawaiian people used (use) the plant?

**PROJECT 2 final project**
• Choose one ecosystem and describe the living and non-living components of your ecosystem. What are the basic geology and environmental characteristics of the ecosystem?
• Include at least 3 native plants that are signature species of your ecosystem and tell their stories. YOUR story will influence what you emphasize!

**ASSESSMENT TASKS AND GRADING**
Class presentations, movies, group exercises, field trips and worksheets will be resources for you to succeed on the exams.

Worksheets in the style of the exams will be added along with presentations to Laulima (Resources).

*Add your work to Drop Box of Laulima.*

Make-up for exams is permitted for emergencies or illness accompanied with a doctor’s note; and must be completed within one week of the scheduled exam date. *There are no make-ups for the Final Exam!*

**Grades**

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<tbody>
<tr>
<td>Exam 1</td>
<td>100</td>
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<td>Exam 2</td>
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<tr>
<td>Final Exam</td>
<td>125</td>
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<tr>
<td>Field trips</td>
<td>100</td>
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<tr>
<td>Project 1 Native species &amp; ecosystem</td>
<td>25</td>
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<td>Project 2 Final Project</td>
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<tr>
<td>Exercises &amp; Movie Reflections</td>
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<tr>
<td>Herbarium 10 Species</td>
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<td><strong>Total</strong></td>
<td><strong>625 points</strong></td>
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**Service Learning**
I encourage you to volunteer at a Hawaiian/Restoration site as part of Service Learning. Full participation (20 hours/semester) will result in an A grade for one exam (but you must take the exam and earn a C or better) as well as an opportunity to apply theory to practice and contribute to the perpetuation of the sites and all associated with it.
http://servicelearning.socialsciences.hawaii.edu/pages/mina.html

**Grading**
Grading is based on the percentage of total points earned. Final Grades will be assigned as follows:
A 90 - 100%
B 80 - 89%
C 70 - 79%
D 60 - 69%
F 0 - 59%

I (incomplete), given at the INSTRUCTOR’S DISCRETION when you are unable to complete a small part of the course because of circumstances beyond your control. It is YOUR responsibility to make up incomplete work with a minimum level (or better) of achievement. Failure to satisfactorily make up incomplete work within the appropriate time period will result in a grade change from "I" to the contingency grade identified by the instructor (see catalog).
CR (credit), 60% or above in total points. You must indicate an intent to take the course as CR/NC and audit options in writing by April 3, 2017 (see catalog). NC (no credit), below 60% or total points (see catalog). The NC grade will not be used as an alternative grade for an “F”. Last day to withdraw with “W” grade is April 3, 2017.
LEARNING RESOURCES

Additional Texts/Resources

Websites (not a comprehensive list!)
http://www.botany.hawaii.edu/faculty/carr/natives.htm
http://data.bishopmuseum.org/ethnobotanydb/ethnobotany.php?b=list&o=1
http://www.Hawaiianativeplants.com/
http://nativeplants.hawaii.edu/
http://wildlifeofhawaii.com/flowers/
  • SEE PARTICULARLY NATIVE PLANTS AND FAMILIES
  • http://wildlifeofhawaii.com/flowers/category/native-status/native-plants/
  • http://wildlifefofhawaii.com/flowers/category/plant-family/
http://www.to-hawaii.com/oahu/gardens/hoomaluhibotanicalgardens.php
http://www1.honolulu.gov/parks/hbg/kcbg.htm
http://www1.honolulu.gov/parks/hbg/
http://www.marinephotography.com/flowers/flowers.htm
http://www.bishopmuseum.org/podcasts/

Additional Information
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.

Nondiscrimination and Affirmative Action
The University of Hawaii is committed to a policy of non-discrimination on the basis of race, sex, age, religion, color, national origin, ancestry, disability, marital status, arrest and court record, sexual orientation, or veteran status in all of its programs, policies, procedures, or practices.

This policy covers admission and access to, participation, treatment and employment in University program and activities.
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<thead>
<tr>
<th>Date</th>
<th>Lecture/Lab</th>
<th>Textbook</th>
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<tr>
<td>January 9</td>
<td>Introduction to Environmental History</td>
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<tr>
<td>12</td>
<td>Plant Identification</td>
<td>1-3, 19, 33</td>
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<td>17</td>
<td>What is the Hawaiian environment?</td>
<td>18, 33</td>
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<tr>
<td>20</td>
<td>What is the Hawaiian environment?</td>
<td>28, 33</td>
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<td>31</td>
<td>Field Trip: Uluhe Native Hawaiian Nursery</td>
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<td>February 2</td>
<td>What are Hawaiian biological phenomena?</td>
<td>33, 34</td>
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<td>7</td>
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<td>81-122</td>
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<tr>
<td>14</td>
<td>What are Hawaiian biological phenomena?</td>
<td>122-156</td>
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<td>16</td>
<td>Native Hawaiian Ecosystem Prescriptions</td>
<td>Chapter(s)</td>
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<tr>
<td>23</td>
<td>Native Hawaiian Ecosystem Prescriptions</td>
<td>14-19</td>
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**Spring 2016 Botany 130 Lecture/Lab SCHEDULE**

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<tr>
<th>Date</th>
<th>Activity</th>
<th>Location</th>
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<tr>
<td>3/27</td>
<td>Introduction to ecosystems, communities, biogeographic regions, identification</td>
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<tr>
<td>3/29</td>
<td>Coastal drier forest Movie: Introduction to ecosystems, communities, biogeographic regions, identification</td>
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Note: The schedule for the next month will be announced at the beginning of the class. Have a great semester!