AG 152  Orchid Culture (CRN 62255)  
3 credits  
T,R 1:00 pm – 2:15 pm

INSTRUCTOR:  Ingelia White PhD  
OFFICE:  Hale Imliloa 102  
OFFICE HOURS:  T,R 12:30 pm – 1:00 pm or by appointment  
TELEPHONE:  236-9102  
EFFECTIVE DATE:  Spring 2013

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

An extensive study of orchid identification, breeding, growth, and tissue culture. Students are required to write a research paper or provide a power point presentation or active participation in orchid societies (3 hrs. lect.)

REQUIREMENT COURSE SATISFIES:

AT WCC: Certificate of Achievement (CA) in Agripharmatech: Plant Biotechnology, CA in Agripharmatech: Ethnopharmacognosy, and AS in Natural Sciences

AT UHM: Bachelor of Science Degree programs in Tropical Plant and Soil Science (TPSS), and Plant and Environmental Biotechnology (PEB). Accepted as an elective for the following specializations: Plant Biotechnology, General Biotechnology, and Environmental – Microbial Biotechnology.

Activities Required at Scheduled Times Other Than Class Times

Attend Orchid Society meetings, field trip to orchid nurseries, participate in orchid shows, orchid potting demonstrations at Ho’olaulea etc. These are extracurricular activities that you can earn some extra credits.

STUDENT LEARNING OUTCOMES

The student learning outcomes for the course are:

1. Identify orchid species, hybrids and trace their pedigrees
2. Provide cultural requirements for each genus, including temperature, light intensity, humidity, watering, fertilizing, media composition, pest/disease control and repotting
3. Perform traditional and in vitro propagation techniques
4. Perform orchid breeding and discuss its economic importance
5. Conduct research and submit research paper
COURSE CONTENT

**Concepts or Topics:**

1. Orchid classification. Learning botanical terms (generative and vegetative parts of orchid plants)
2. Planting and orchid pests/diseases
3. Propagation (traditional and tissue culture)
4. Orchid genetics, breeding and molecular phylogenetic

**Skills or Competencies: you will be able to**

1. Use dissecting microscope, read manuals/monographs, and Sander’s List of Orchid Hybrids
2. Grow orchids to bloom profusely
3. Grow orchids in vivo and in vitro
4. Produce prize winning hybrids through conventional breeding and perform basic DNA extraction, PCR reaction, and preparing phylogenetic trees (pending time availability)

COURSE TASKS

1. **Division of time**
   About 60% of class time will be spent on lectures, video and demonstration. The other 40% will be used for field works at the Bioprocessing Medicinal Garden and the climate-controlled greenhouse, and/or field trip to orchid nurseries, and lab work at the Tissue Culture and Plant Biotech Laboratory.

2. **Reading assignment**
   You are expected to read specific chapters in the textbook prior to lectures, and research readings in preparation for your research reports/poster boards. Other reading assignments (hand-outs) will be provided.

3. **Participation**
   You should participate fully in homework, fieldwork and lab assignments.

ASSESSMENT TASKS AND GRADING

Class lectures, assigned readings, lab exercises, field trips and field works constitute fundamental knowledge you need in order to identify orchid species correctly, to propagate and maintain the growth/health of the orchid plants, and be able to create excellent hybrids.

**Method of grading:**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Points</th>
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<tbody>
<tr>
<td>Exams (midterm and final)</td>
<td>200</td>
</tr>
<tr>
<td>Research paper or power point</td>
<td>25</td>
</tr>
<tr>
<td>Field trip report</td>
<td>10</td>
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<tr>
<td>Field work and Lab participation</td>
<td>50</td>
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<tr>
<td>Extra curricular activities</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>295</strong></td>
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Letter grades will be assigned as follows:

A.........90% or above in total points.
B.........80 – 89.9% of total points.
C.........65 – 79.9% of total points.
D.........55 – 64.9% of total points.
F—below 55% of total points/informal/incomplete official withdrawal from the course.
I—Incomplete; given at the instructor’s option 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. Failure to satisfactorily make up incomplete work within the appropriate time period will result in a grade change for “I” to contingency grade identified by the instructor (see catalog).
CR—65% or above in total points; you must indicate the intent to take the course as CR/N in writing by the end of the 10th week of classes (see catalog).
NC—Below 65% of total points; this grade only available under the CR/N option (see above and see Catalog).
N—Not given by this instructor except under extremely rare circumstances (e.g. documented serious illness or emergency that prevents you from officially withdrawing from the course); never used as an alternative for an “F” grade.
W—Official withdrawal from the course after the third week and prior to the end of the 10th week of classes (see catalog).

Waiver of minimum requirements for specific grades will be given only in unique situations at the instructor’s discretion.

LEARNING RESOURCES

- Hand-outs

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.

NON-DISCRIMINATION POLICY
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Spring 2013
AG 152 Course Schedule*
Instructor: Dr. Ingelia White

Jan. 8  Introduction (revitalizing interest in orchids)
Jan. 10 Orchard terminology
Jan. 15 Orchard terminology (continued)
Jan. 17 Field work at BMGC or Kuhi La’a’au (depending on weather)
Jan. 22 Orchid taxonomy (traditional and molecular taxonomy)
Jan. 24 Sub fam. Dendrobioid, Tribe Vandeae
Jan. 29 Sub fam. Epidendroid, Tribe Epidendreae
Jan. 31 Sub fam. Cypripedioideae, Tribe Cypripedieae

Feb. 5  Sub fam. Dendrobioid, Tribe Dendrobieae
Feb. 7  Sub fam. Cymbidioid, Tribe Cymbidieae
Feb. 12 Invited speaker (orchid molecular taxonomy)
Feb. 14 Invited speaker (orchid genomic research)
Feb. 19 Traditional propagation (greenhouse)
Feb. 21 Growing, fertilizing, pests/diseases (greenhouse)
Feb. 26 Seedling transplanting (greenhouse)

Feb. 28 Midterm

Mar. 5  In vitro propagation (video, lecture)
Mar. 7  In vitro propagation (demo)
Mar. 12 Media preparation (lab)
Mar. 14 WOS Show set up
Mar. 19 Seed, embryo, ovulary cultures (lab)
Mar. 21 Seed, embryo, ovulary cultures (lab)
Mar. 25 – 29 Spring Recess

Apr. 2  Meristem, inflorescence, stem cultures (lab)
Apr. 4  Meristem, inflorescence, stem cultures (lab continued)
Apr. 9  Field trip
Apr. 11 Class presentation 1
Apr. 16 Class presentation 2
Apr. 18 Genetics
Apr. 23 Orchid breeding
Apr. 25 Orchid breeding continued
Apr. 30 Class presentation 3

May 2  Class presentation 4

May 7  Final exam

* Field trips/field work subject to change depending on weather