

AG 152 Orchid Culture (CRN 60202)

3 credits

T,R 1:00 pm – 2:15 pm

INSTRUCTOR:	Ingelia White PhD
OFFICE:	Hale Imiloa 102
OFFICE HOURS:	T,R 12:30 pm – 1:00 pm or by appointment
TELEPHONE:	236 - 9102
EFFECTIVE DATE:	Spring 2014

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 and active participation in orchid societies (3 hrs. lect.)

REQUIREMENT COURSE SATISFIES:

AT WCC:

- AA (DB)
- Certificate of Achievement (CA) in Agripharmatech: Ethnopharmacognosy
- CA Agripharmatech: Plant Biotechnology
- Certificate of Competence (CoC) in Plant-Food Production and Technology

AT UHM:

- Bachelor of Science Degree (B.Sc.) in Tropical Plant and Soil Science (TPSS)
- B.Sc. 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 to 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 and turn 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 to master 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:

Exams (midterm and final)	200 points
Research paper or power point	25 points
Field trip report	10 points
Field work and Lab participation	50 points
Extra curricular activities	10 points
Total	295 points

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 March 20, 2014 (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 without a “W” Grade (February 3, 2014). Last day withdrawal with a “W” Grade (March 20, 2014 (see catalog).

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

LEARNING RESOURCES

- Alec Pridgeon. 2003. The Illustrated Encyclopedia of Orchids. David and Charles Publishing Co.
- White, I. 2011. Ethnopharmacognosy Series III: Pharmaceutical and Nutraceutical Values of Honohono Orchid. Windward Community College
- 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 2014
AG 152 Course Schedule*
Instructor: Dr. Ingelia White

Jan. 14 Introduction (revitalizing interest in orchids)
Jan. 16 Orchid terminology
Jan. 21 Videos (orchid scientific presentations)
Jan. 23 Field work at BMGC or Kuhi La'au (depending on weather)
Jan. 28 Orchid taxonomy (traditional and molecular taxonomy)
Jan. 30 Sub fam. Dendrobioid, Tribe Vandeae

Feb. 4 Sub fam. Epidendroid, Tribe Epidendreae
Feb. 6 Sub fam. Cyripedioideae, Tribe Cyripedieae
Feb. 11 Sub fam. Dendrobioid, Tribe Dendrobieae
Feb. 13 Sub fam. Cymbidioid, Tribe Cymbidieae
Feb. 18 Orchid ID
Feb. 20 Traditional propagation (greenhouse)
Feb. 25 Growing, fertilizing, pests/diseases (green house)
Feb. 27 Seedling transplanting (greenhouse)

March 4 Midterm

Mar. 6 In vitro propagation (video, lecture)
Mar. 11 In vitro propagation (demo)
Mar. 13 Media preparation (lab)
Mar. 18 Seed, embryo, ovulary cultures (lab)
Mar. 20 WOS Show set up
Mar. 24 – 28 Spring Recess

Ap. 1 Seed, embryo, ovulary cultures (lab)
Ap. 3 Meristem, inflorescence, stem cultures (lab)
Ap. 8 Meristem, inflorescence, stem cultures (lab continued)
Ap. 10 Field trip or extra curricular activity
Ap. 15 Class presentation 1
Ap. 17 Orchid genetics
Ap. 22 Orchid genetics (continued)
Ap. 24 Orchid breeding & pedigrees
Ap. 29 Orchid breeding continued

May 1 Class presentation 2
May 6 Class presentation 3

May 13 Final exam

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