

AG 152 Orchid Culture (CRN 61125)

3 units Hale 'Imiloa 101

MW 8:30 – 9:45 pm

INSTRUCTOR: Teena Michael PhD
OFFICE: Hale 'Imiloa 130
OFFICE HOURS: M & W 9:45 to 10:45 and other times by appointment
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EFFECTIVE DATE: Spring 2016

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

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 hours lecture)

REQUIREMENT COURSE SATISFIES:

AT WCC:

- AA Associate in Arts - Biological Sciences (DB)
- CA Agripharmatech: Ethnopharmacognosy (Elective)
(http://windward.edu/Academics/Agripharmatech_CA/)
- Certificate of Competence (CoC) in Plant-Food Production and Technology

AT UHM:

- Bachelor of Science Degree in Tropical Plant and Soil Science (TPSS)
- Bachelor of Science Degree in 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, or other extracurricular activities to earn grade points.

STUDENT LEARNING OUTCOMES

The student learning outcomes for the course:

- 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

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

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, lab work at the Tissue Culture and Plant Biotech Laboratory, and/or field trip to orchid nurseries.

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.

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

Exam 1	100 points
Exam 2 Final	100
Reading Reflections	50
Field Trips Report	25
Project	30
Extra Curricular Activities	20
Field Work & Lab Participation	60
<u>Herbarium 1 orchid species</u>	<u>15</u>

400 points

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 65 - 79%

D 55 - 64%

F 0 - 54%

- 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), 65% or above in total points. See catalog for specifics and calendar for dates. NC (no credit) will be assigned for a grade below 60% of total points.
- NC** (no credit), below 65% of total points; this option will not be used as an alternative grade for an "F" since you need to register for CR/NC option.
- W** Last day to withdraw with "W" grade is March 29, 2016 (see catalogue).

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

Websites (not a comprehensive list!)

Plant families

<http://www.botany.hawaii.edu/faculty/carr/pfamilies.htm>

- Follow monocots to the family Orchidaceae
http://www.botany.hawaii.edu/faculty/carr/alpha_cronq_judd_apgii.htm#MONOCOTS
- See 2 major subfamilies of orchids
<http://www.botany.hawaii.edu/faculty/carr/orchid.htm>

American Orchid Society <http://www.aos.org/default.aspx?id=1>

Honolulu Orchid Society <http://www.honoluluorchidsociety.org/>

- see tips and things for example

Windward Orchid Society <http://www.windwardorchidsociety.org/>

- see downloads section for example

Kawamoto's Orchids <http://www.kawamotoorchids.com/orchid-store>

Kaimuki Orchid Society <http://www.kaimukiorchidsociety.org/Pages/default.aspx>

- see potting demo

<http://www.kaimukiorchidsociety.org/Pages/Gallery.aspx>

Orchid Shows <http://www.honoluluorchidsociety.org/hawaii-orchid-shows/>

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 to succeed in this class. Ann Lemke can be reached at 235-7448, lemke@.edu, or you may stop by Hale 'Akoakoa 213 for more information.

Nondiscrimination and Affirmative Action

The University of 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.

Spring 2016 Ag 152 COURSE SCHEDULE

Date	Lecture Topic	Textbook Chapter(s)
Jan 11	Introduction to Orchids & Class!	
13	Orchid Terminology	
18	HOLIDAY	
20	Introduction to Orchid Taxonomy	
25	Sub Family Dendroboid Tribe Vandaeae	
27	Sub Family Epidendroid Tribe Epidendreae	
Feb 1	Sub Family Cypridendioideae Tribe Cypripedieae	
3	Sub Family Dendroboid Tribe Dendrobieae	
8	“A Brief History of Orchid Classification: The Middle Ages to <i>Genera Orchidacearum</i> ” (Dr. A. Pridgeon)	
10	“The Future of Orchid Classification and Evolutionary Studies” (Dr. A. Pridgeon)	
15	HOLIDAY	
17	“The Shot Heard Round the World” (Dr. A. Pridgeon)	
22	Sub fam. Cymbidioid, Tribe Cymbidieae	
24	Orchid identification	
29	Traditional propagation (greenhouse)	
March 2	Growing, fertilizing, pests/diseases (green house)	
7	Seedling transplanting (greenhouse)	
9	Midterm	
11-13	Windward Orchid Society Show *Required Activity http://www.windwardorchidsociety.org/	
14	In vitro propagation (video) in class, summary report due the same day	
16	Media preparation (lab)	
21&23	HOLIDAY	
SHOWS	Shows: Windward 3-11 through 13, Kunia 3-18 through 20.	
28	<i>Orchid Show Participation and Write Up Due No Class</i> <i>**Last Day to Withdraw with a W 29 March!</i>	
30	In vitro propagation (demo)	
April 4	Tissue culture practicum (seed, embryo, ovulary cultures)	
6	Tissue culture practicum (Meristem, inflorescence, stem cultures)	
11	Tissue culture practicum (Meristem, inflorescence, stem cultures)	
13	Plant Identification & Herbarium	
18	Class presentation 1	
20	Orchid genetics	
25	Orchid genetics	
27	Orchid breeding & pedigrees	
May 2	Class presentations 2	
4	Class presentations 3	
11	FINAL EXAM 8:30-10:30	

*Note: The schedule may be modified as we proceed. I will announce any changes ahead of time.
Have a great semester!*