

## **AG 152 Orchid Culture (CRN 61214)**

3 credits

T,R 1:00 pm – 2:15 pm

<b>INSTRUCTOR:</b>	Ingelia White PhD
<b>OFFICE:</b>	Hale Imiloa 102
<b>OFFICE HOURS:</b>	T,R 10:00 am – 12:00 noon or by appointment
<b>TELEPHONE:</b>	236 – 9102
<b>E-MAIL:</b>	ingelia@hawaii.edu
<b>EFFECTIVE DATE:</b>	Fall 2017

### **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 show, and other extracurricular activities to earn additional 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 propagations
4. Perform orchid breeding and discuss its economic importance
5. Conduct literature or experimental 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 cytogenetics/breeding and phylogenetics

### *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

## 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 climate-controlled greenhouse, and Bioprocessing Medicinal Garden Complex; 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 assigned textbook or hand-outs prior to lectures, and research readings in preparation for your research reports (Power Point).

### 3. Participation

You should participate fully and turn in homework, fieldwork and lab assignments on time

## ASSESSMENT TASKS AND GRADING

Class lectures, assigned readings, field trips, lab/field/greenhouse exercises, video /DVD summaries 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:

Two Exams (midterm and final)	200 points
Research paper/power point presentation	25 points
Field trip report	10 points
Field/greenhouse/Lab participations	50 points
Extra curricular activities (will be announced)	15 points
<b>Total</b>	<b>300 points</b>

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 October 30, 2017 (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 (September 12, 2017). Last day withdrawal with a “W” Grade (October 30, 2017) (see catalog). Waiver of minimum requirements for specific grades will be given only in unique situations at the instructor’s discretion.

## LEARNING RESOURCES

- White, I. 2016. Ethnopharmacognosy Series V: Pharmaceutical and Nutraceutical Values of *Vanda* Miss Joaquim. Windward Community College (in publication)
- Hand-outs
- Alec Pridgeon. 2003. The Illustrated Encyclopedia of Orchids. David and Charles Publishing Co. (optional, available in the WCC Library Learning Commons)

## 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](mailto:lemke@hawaii.edu), or you may stop by Hale ‘Akoakoa 213 for more information.*

## NON-DISCRIMINATION POLICY

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**Fall 2017****AG 152 Course Schedule\* (CRN 61214)****Instructor: Dr. Ingelia White**

Aug. 22	Introduction (revitalizing interest in orchids)
24	Orchid terminology
29	Introduction to orchid taxonomy
31	Field work at BMGC
Sept. 5	Sub fam. Dendrobioid, Tribe Vandeeae
7	Sub fam. Epidendroid, Tribe Epidendreae
12	Sub fam. Cypripedioideae, Tribe Cypripedieae. DVD presentation
14	Sub fam. Dendrobioid, Tribe Dendrobieae
19	“A Brief History of Orchid Classification: The Middle Ages to <i>Genera Orchidacearum</i> ” (DVD, Dr. A. Pridgeon) or Extra curricular activity
21	“The Future of Orchid Classification and Evolutionary Studies” (DVD, Dr. A. Pridgeon), Or other activity
26	Sub fam. Cymbidioid, Tribe Cymbidieae; Orchid pedigrees
28	Orchid pedigrees (continued); Orchid identification
Oct. 3	Traditional propagation (greenhouse)
5	Growing, fertilizing, pests/diseases (green house)
10	Seedling transplanting (greenhouse)
<b>12</b>	<b>No Class (will be replaced with a field trip to HOS Orchid Show on Oct. 13)</b>
<b>17</b>	<b>Midterm</b>
19	Media preparation (lab)
24	In vitro propagation (demo)
26	Tissue culture practicum (seed, embryo, ovulary cultures)
31	Tissue culture practicum (Meristem, inflorescence, stem cultures)
Nov 2	Class presentation 1
7	Video (tissue culture)
<b>9</b>	<b>No Class (Prep for Food Pharmacy)</b>
14	Orchid genetics
<b>16</b>	<b>International Education’s Orchid Food Pharmacy)</b>
21	Orchid genetics (continued)
23	Orchid breeding
28	Orchid breeding continued
30	Orchid breeding continued
Dec. 5	Class presentation 2
7	Class presentation 3
<b>12</b>	<b>Final exam</b>

\* Field trips/field work schedule could be changed depending on weather condition. Extra curricular activity(s) will be discussed in the class.