

## **BOT 101 General Botany (CRN 61078)**

(Lecture/Lab, 4 Credits)

TR 02:30 – 5:00 pm, Hale Imiloa 101

**INSTRUCTOR:**

Dr. Hongwei Li

**OFFICE:**

Hale Imiloa 107

**OFFICE HOURS:**

Tuesday 1:30 pm – 2:30 pm, or by appointment

**TELEPHONE:**

236-9104

**EMAIL:** hli@hawaii.edu

**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 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**

Introduction to plant structure, function, reproduction, and evolution; plants in relation to the environment and human activities. Lecture/laboratory/field trip course.

*Recommended Preparation: High school biology.*

### **Activities Required Other Than Class Times**

Preparation of assignments for lectures/labs; possible field trip or campus walk during class time.

### **STUDENT LEARNING OUTCOMES**

The student learning outcomes for the course are:

- Discuss basic concepts and perform lab experiments in plant morphology, anatomy, physiology, cytology, taxonomy and genetics.
- Discuss life cycles of division in Protista, Fungi, Bryophyta, Pteridophyta, Gymnosperms, and Angiosperms.
- Discuss interrelationship between plants and animals, and socio-economic importance of plants on humans.
- Discuss plant tissue culture & biotechnology.
- Operate dissecting and compound microscopes.
- Discuss traditional and *in vitro* plant propagation.

### **COURSE TASKS AND GRADING**

- Class attendance is mandatory.
- Students must be able to access / utilize Lualima via the internet for this course.
- Students are expected to read the assigned chapters before coming to class.

### **Quizzes**

- There are four quizzes will be given in the class, and the time will be announce at least one day ahead.

### **Midterm Exams**

- There are two midterm exams, and each includes contents from both lectures and labs.
- Make-up exam: make-up exam will be permitted only when there is a legitimate excuse (such as illness or emergency; doctor's note is required).

### Final Exam

- Is accumulative, includes contents from lectures and labs.
- No early or make-up exam for the final.

### Lab Exercises

- Students must be present in class in order to receive credit for the scheduled laboratory exercises. The credits will be given based on student's attendance and performance in the lab.

### Lab Reports

- Title, introduction, materials and methods, results and discussions.
- The lab reports are due at each exam.

### Grading

Tasks	Possible Points
Exam 1	100
Exam 2	100
Final Exam	150
Lab Exercises	100
Lab Reports	100
Quizzes	100
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Total possible points	650

- 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) grade is given at the instructor's option when a student has failed to complete a small part of a course because of circumstances beyond his or her control. The student is expected to complete the course by the designated deadline in the succeeding semester. If this is not done, the I grade will revert to the contingency grade identified by the instructor

## LEARNING RESOURCES

### Required Textbook

- Introductory Botany Plants, People, and the Environment. L. Berg, 2008, 2<sup>nd</sup> edition, Thompson Brooks Cole.

### Lecture / Lab materials

- <https://laulima.hawaii.edu>

## 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.*

<b>Date</b>	<b>Reading Chapter</b>	<b>Topic</b>	<b>Lab</b>
Jan 12	1/2	Introduction /The Chemical Composition of Cells	<b>Lab 1:</b> Lab Safety/Dissecting Microscope
Jan 14	2	The Chemical Composition of Cells	<b>Lab 2:</b> Compound Microscope
Jan 19	2	The Chemical Composition of Cells	<b>Lab 3:</b> Chemical Composition of Cells / pH
Jan 21	3	Plant Cell Structure	<b>Lab 4:</b> Plant Cells
Jan 26	5	Plant Tissues and the Multicellular Plant Body	<b>Lab 5:</b> Plant Body and Tissues
Jan 28	6	Plant Organs: Roots	<b>Lab 6:</b> Roots
Feb 2	7	Plant Organs: Stems	<b>Lab 7:</b> Stems
Feb 4	8/10	Plant Organs: Leaves /Transport of Water & Mineral Nutrient	<b>Lab 8:</b> Leaves
Feb 9	9	Flowers, Fruits, & Seeds	<b>Lab 9:</b> Flowers
Feb 11	9	Flowers, Fruits, & Seeds	<b>Lab 10:</b> Fruit & Seeds
<b>Feb 16</b>		<b>Exam 1</b>	<b>Turn in Lab Reports</b>
Feb 18	4	Metabolism in Cells	<b>Lab 11:</b> Transpiration
Feb 23	4	Metabolism in Cells	<b>Lab 12:</b> Photosynthesis
Feb 25	11	Growth Responses and Regulation of Growth	<b>Lab 13:</b> Plant Tissue Culture 1
Mar 1	11	Growth Responses and Regulation of Growth	<b>Lab 14:</b> Plant Tissue Culture 2
Mar 3	12	Mitosis, Meiosis and Life Cycles	<b>Lab 15:</b> Cell Division
Mar 8	13	Patterns of Inheritance	<b>Lab 16:</b> Principles of Genetic Inheritance
Mar 10	14/15	Molecular Basis of Inheritance	<b>Lab 17:</b> DNA
Mar 15	14/15	Molecular Basis of Inheritance	<b>Lab 18:</b> Plant DNA Sequence Databases and Analysis Tool
Mar 17	16/17	Evolution	<b>Lab 19:</b> Evolution in Hawaiian Plants: Phylogenetic Analysis
Mar 22/24		Spring Recess	
<b>Mar 29</b>		<b>Exam 2</b>	<b>Turn in Lab Reports</b>
Mar 31	18/19	Introduction to Viruses and Bacteria	<b>Lab 20:</b> Bacteria
Apr 5	20	Introduction to Kingdom Protista	<b>Lab 21:</b> Algae
Apr 7	21	Introduction to Kingdom Fungi	<b>Lab 22:</b> Fungi
Apr 12	22	The Plant Kingdom: Bryophytes	<b>Lab 23:</b> Mosses & Liverworts
Apr 14	23	The Plant Kingdom: Seedless Vascular Plants	<b>Lab 24:</b> Ferns
Apr 19	24	The Plant Kingdom: Gymnosperms	<b>Lab 25:</b> Gymnosperms
Apr 21	25	The Plant Kingdom: Flowering Plants	<b>Lab 26:</b> Angiosperms
Apr 26	26	Ecosystems	<b>Lab 27:</b> Ecosystems
Apr 28	27	Global Ecology and Human Impact	
May 3	27	Global Ecology and Human Impact	
<b>May 12</b>		<b>Final Exam 2:30 - 4:30 pm</b>	<b>Turn in Lab Reports</b>