CHAMINADE UNIVERSITY OF HONOLULU - Winter 2000 EVENING PROGRAM
JANUARY 10 - MARCH 22, 2000 - SCHOFIELD BARRACKS EDUCATION CENTER
BIOLOGY 103 - Intro Plant Biology

w60

Course: **Bi 103 - Intro Botany - Introduction to Plant Biology (3.0 cr)**
Days/Times: TUESDAYS AND THURSDAYS **5:30-7:35 p.m.**
Instructor: **Shirley B. Gerum, B.A., Botany; MPH, Environmental Health**
Mail: **P.O. Box 18; Haleiwa, HI 96712**
Office hours: Immediately after class (or by **appointment) Contact:CUH SB Office: 624-2515**
Text: ***Introductory Plant Biology*** **(any edition) by Kingsley Stern**

1. **COURSE DESCRIPTION: During the course of this semester, we will concentrate on the distribution, identification, structure and physiology of plants with special attention to identification and uses of tropical plants of Hawaii. To ensure that the lessons learned in semi-tropical Hawaii can be applied to anywhere else on earth you may be sent, there will be an emphasis on plant family recognition.**

According to the author of your text, the word botany (the study of plants) comes from the French word *botanique* **(botanical). Of course, we go to the Greek and Latin roots for the ultimate basis of scientific terms and find three Greek words:** *botanikos* (botanical), *botany* **(plant or herb), and boskein (to feed), which appear to have origins with Stone Age peoples who sought to modify their surroundings and feed themselves.**

The traditional science of botany comes to us in the Western world from information handed down from those early Greeks who developed a practical interest in food and drug plants and became curious about the structure and function of plants. Those who recorded their observations (Plato [d. 347 B.C.], Aristotle [384-322 B.C.], Theophrastus [ca. 370-285 B.C.], Dioscorides [ca. 200-70 A.D]) stand out. However, we must not forget that cultures all over the globe were also making outstanding observations and contributions to our collective plant knowledge. Some observations were passed down only orally; some recorded on material that is barely readable, some in languages yet to be translated. A backlog of Chinese, Etruscan, Mayan, Tibetan, Incan records await translation. You may choose to record the oral history of your own family's plant knowledge.

11. **CLASS OBJECTIVE: To provide students with a basic understanding of botany:**
- **To become familiar with the biology and physiology of plants (their cellular, chemical composition and the functions of their organs and structures), macro and micro**
- **To learn how plants fit into the known kingdoms of life on earth recognized today, the ways plants are classified within the plant kingdom (learning to recognize plant families by close examination of plant families we observe in the field)**
- **To understand and appreciate how plants (which contain the original solar collectors) have made life possible on our planet by providing oxygen and food.**
- **To draw upon uses of plants for food, medicine, forensic science, bioremediation (phyto-**mediation) for Our lessons and **continually look for examples in our surroundings.**
  To develop an understanding of the fragile nature of life and the world's endangered species
  To develop an understanding of how plants have literally changed the history of the world as a result of crop failures leading to mass migrations, exploration for new commerce, trade wars

III. **METHODOLOGY:**
- **Reading assignments from text, handouts, news media; independent research, documentation.**
- **Class lectures will be structured to provide students with the basis for further application in the biological sciences.**
- A **variety of assignments will be used to reinforce botanical/biological concepts discussed in this course. Life experiences will be incorporated, where applicable, to provide students with the vocabulary and skills needed for competency in the biological sciences.**

IV. **GRADING: 5 assignments and/or exams at 50 pts. each .... 250 points possible**
Three Botanical Articles in the News (5 pts. **ea.) ..... 15 points possible**
Attendance, Participation, Sportsmanship (APS) ..... 15 points possible
280 points possible

V. STUDENT RESPONSIBILITIES:

1. **Attendance/Participation/Sportsmanship (APS):** Attendance, participation and sportsmanship are vital to maintaining interactive excellence. **Attendance: Students with the highest grades are usually those who have participated in hands-on activities, materials, are present for demonstrations, special speakers, discussions and videos that cannot be repeated. The pace of an accelerated class does not allow time to respond to individual reiterations due to absence or late arrival. Participation: The input of class members is one of the most valuable components of a university-level class. To emphasize the importance of participation, support for those presenting ideas to the class and to underscore zero tolerance for unwelcome remarks re rding ender, ethnicity, lifestyle, 15 points of the total grade will be based on APS.** Good **Sportsmanship goes a long way in any field: yielding to those who are speaking, withholding negative comments and judgments.** A **science class is a good place to polish up skills in polite scholarly debate since theories always** provide controversy.

2. **Academic Honesty: CUH policies regarding academic honesty are clear. Plagiarism is the deliberate use or reproduction of ideas, words, statements of another as one's own without proper acknowledgment or citation. Papers with plagiarized information will be returned without credit. Cheating: No student may give or receive help from another during examinations. No student may hand in or cause to be handed in another student's work as one's own. The copying of another's assignments(s) (complete or partial) and/or submitting as one's own original work (however freely given or purchased) the original exam, research paper, manuscript, report, computer file, or other assignment that has been prepared by another individual, website, publisher is also forbidden and will result in a ZERO for the assignment. Minor changes in wording or syntax-without acknowledgment of original work is NOT sufficient to avoid plagiarism charges. According to CUH regulations, the usual penalty for academic dishonesty is failure in the course for the 1st offense and disciplinary action, not to exclude suspension /expulsion from CUH for 2nd offense.**

3. **Missed Quizzes/Exams: Out of respect to students who come prepared to take quizzes/exams in spite of obstacle/illnesses, students who miss a quiz or exam will not be given the opportunity for a makeup exam. Exceptions will be made for students with documented duty or medical absences. It is the student's responsibility to keep informed of assignments, quizzes. Please check with other students if you miss class. "Not knowing" of an announced quiz will not excuse any student.**

4. **Written or Typed? Written work will be cheerfully accepted as long as it can be clearly read, If the writing is too small (or the type font used is below 13 point for typed material), you will be asked to enlarge the paper at the Library xerox below. (Note: This sentence uses TIMES 13 point type font.** This sentence: HELVETICA 13 point. **This sentence too small: Times 12 point.)**

course: Bi 103 L- Botany - Introduction to Plant Biology Lab (1.0 cr)
Days/Time: Mondays & Wednesdays 7:50-9:50 p.m. (3 hours/wk within our 4-hour time period)

Three hours each week will be devoted to lab activities (fieldwork, campus walks, microscopy, field trips, dissecting, collecting, pressing plant specimens, etc.). We are fortunate to have an **amazing abundance & variety of plant life all around us-a "living laboratory" to learn from around Schofield-around our Island.While your mainland counterparts are studying dried specimens, line drawings and photos, we will have access to a variety of plants from around the globe 365 days a year right outside our door-some found only in Hawaii. Since we will have enough daylight at the beginning of class to fieldtrip and walk around campus to observe plant anatomy, taxonomy, reproduction, life** cycles, ecology, Lab/Lecture often merge. Many of the **learning opportunities afforded us from our environment will apply to the lab and lecture portions of this course. You will also be carrying out some of the lab assignments in your neighborhoods, hopefully with your families. The lab portion** of **our class will consist** of **10 assignments/quizzes worth 15 points each-from the mundane to the bizarre-for a total** of **150 points.**

90-100% (135-150) = A; 80-89% (120-134) = B; 70-79% (105-119) = C; 60-69% (90-104)=D; Below = F

Bi 103 - Introduction to Plant Biology - CUH Wtr Eve 2000-Schofield Bks
Instructor: **Shirley** Gerum; **Days/Times: Tu/Thur** within 5.30-955 time frame
Topic Note: Subject to **Change** to **Accommodate Events/Speakers**

DATE	DAY			Text Reference
JAN 11	TU	1	What is Botany? What are Fields within the study of **Botany?** Why Study Plants? LAB: The Botany of Salsa & Corn Chips: an Intro to Plant Families, Classification, Taxonomy	Ch 1, Ch 16
			Origin and Nature of Life on Earth/Role of Plants in making Other Life Forms Possible; 5? Kingdoms; Photosynthesis	Ch 1, 2, Ch 16 (Mark pp. 240-244)
JAN 13	THUR	2	**Natural Selection** on Islands; Origin of Hawaiian Islands, **Natural** Selection. In Hawai'i;Introduction to Hawaii's Unique **Ecosystems;** Rainforests & Coral Reefs: Threats to Both **Here/Worldwide** A **Roadmap** to Kingdom **Plantae** & Life Cycles: In the beginning The Cell; **Phytoremediation** LAB Alien Plants & Ecosystem	Ch 15 Ch 3
JAN 18	TU	3	**Cellular Reproduction:** Mitosis: **Asexual** Reproduction, DNA **Traditional Vegetative** Propagation &Biotechnology LAB Vegetative **Propagation:** Air-layering, **Cuttings,** Grafting	Ch 3 4, 6 Ch-3. Ch 14
JAN 20	THUR	4	Meiosis: Sexual Reproduction; Sex & The Single Plant Pollination; LAB: Plant Anatomy: Flowers	Ch 12
JAN 25	TU	5	Genetics/Mendel; Evolution/Darwin How Mendel, Darwin & Wallace's theories play out in the Hawaiian Islands; Crick, Watson & DNA; Lab: Pollination Systems: The Birds & the Bees	Ch 12, 13, 14 Ch 13, 14,15
JAN 27	**THUI**	6	Exam 1 + Lab Quiz 1 (Flower Structure) **Followed** by Flowering **Plants** & Civilization: Plant Families	Ch **24**
FEB 1	TO	7	Plant Tissus: **Non-Meristematic** Tissues; Examples **in Nature** **LAB** Stems' & Roots + Plant Family of the **Week**	Ch 4 Ch 5
FEB 3	THUR	8	Stems Revisited + LAB: Plant Family of the Week	Ch 6
FEB 8	to	9	Leaves +Plant Family of the **Week**	Ch 7
FEB 10	THUR	1 0	Water in Plants + Plant Family of the Week Plant Metabolism + Plant Family, of the Week Plant **Growth;** Summary **&** Review +Plant Family of the Week Lab:Valentine's Day,: The Botany of Chocolate & the Rose Family	Ch 9 Ch 10 Ch 11
FEB 15	**TU**	**1 1**	Exam 2 + Lab Quiz, followed by Plant Kingdom **Phyloge**	**Ch** 20-23
FEB 17	THUR	1 2	Phylogeny of Plant **Kingdom** Continued	
FEB 22	**TU**	**1 3**	**Flowers, Fruits** and Seeds	**Ch 8**
FEB 24	THUR	**1 4**	**Ecology**	**Ch 25**
FEB 29	T U	1 5	Exam 3 + Lab Quiz	
MAR 2	**THUR**	1 6	**Student** Seminar Presentations	
MAR		1 **7**	**Student** Seminar Presentations . Note 3/7 Last Day to Turn in **All Assignments for Credit**	
MAR 9	THUR	1 8	Tentative: Fieldtrip to **Waimea** Botanical Garden **Meet** 5:00-5:30 at Visitor Ctr **Bi** 103 Students **Only**	
MAR 14	TU	1 9	The Botany of St. Patrick's Day: What is a Shamrock, **Anyway?** **Final** Student Presentations and Review	
MAR 1	THUI	2 0	**Exam** 4 **(Final Exam)** and Aloha	