Course Description:
BIO-130  People Plant Relationships explores the effects of plants on biological organisms that influence human economic, social, and psychological behavior. The course will focus on two major themes: (1) plants as sources of food, shelter, clothing, drugs, and industrial raw material and (2) the influence of plant life on human cultural diversity, biotechnology, medicine, and conservations efforts.

Student Learning Objectives and Outcome. The student will be able to:
1. Define the study of people plant relationships and describe its impact on society. Assessment will be based on performance on exam questions.
2. Use the scientific method to analyze a problem and draw conclusions from the data. Students will be evaluated by performance in the laboratory and oral presentation.
3. Distinguish between scientific theory and scientific discovery. Assessment will be based on performance and exam questions.
4. Explain the importance of plants to humans and all life on Earth. Assessment will be based on performance on exam questions.
5. Recognize the evolution, diversity and classification of the plant kingdom. Assessment will be based on performance on exam questions.
6. Identify the structure and function of plant cells, tissues, roots, stems, leaves, and reproductive organs. Assessment will be based on performance on exam questions and laboratory observation.
7. Explain the structure and function of nucleic acids (DNA, RNA) and their importance in life processes, and their role in cellular activities and reproduction. Students will be evaluated by their performance on exam questions and laboratory observation.
8. Describe and demonstrate how plants reproduce asexually and sexually and identify the role of pollinators. Students will be evaluated by their performance on exam questions and in the laboratory.
9. Identify the importance of processes such as photosynthesis, respiration and the movement of water in plants. Students will be evaluated by their performance on exam questions and in the laboratory.
10. Recall the mechanisms of growth and development and the effects of hormones and growth regulating substances. Students will be evaluated by their performance on exam questions and in the laboratory.
11. Recognize the adaptations and responses of plants to their environment, the dynamics of plant ecology and the various biomes of the world. Assessment will be based on performance on exam questions and in the laboratory.
12. Identify the health issues specifically involving plant usage as a medical curative. Demonstrate a command of the information, ability to think critically, and evaluate the importance to society. Assessment will be based on either a written paper, oral presentation, or creation of an equivalent project.

Class participation: Students will be actively involved in the procedures of setting up, conducting, and completing assigned experiments and demonstrations. (Students must be focused on the materials being presented by the instructors and classmates or face loss of participation points.)

Attendance Policy: All students are expected to attend punctually every scheduled meeting. Attendance will be kept by the instructor for administrative and counseling purposes. Three unexcused absences or frequent tardiness will result in the loss of the 20 points awarded for participation.
Course Content: The People-Plant Relationship course is designed to expose students to the botanical plant families that have been utilized throughout history by cultures that have an economically successful society. The role of the instructor(s) is to act as a facilitator of discussion on the diversity of plants present in everyday life. The course will examine the usage of plants as they affect society’s utilitarian, psychological, and physiological needs, including our cultural concern for beauty and environmental conservation.

Students will conduct independent and group research projects that will be designed for surveying the preferences, beliefs, and economic concerns people have in relationships with plants as food or manufactured goods and services.

The instructor(s) will encourage serious dialogue on current issues of conservations, the environment, and social, political and economic concerns raised by the scientific community or by the population in general.

Students will explore via the futures markets the global economy and production centers that provide the agricultural capacity and in many cases the power to run a society.

With exposure to this subject matter, students will develop a greater appreciation for the ways in which plants enter into their daily lives and for the global issues that involve agricultural production of diverse crops traded around the world. (Plants, oil, nuts, fruits, juices, fibers, vegetables, lumber, medicine, etc.)

The course should instill in the student the value of a plant population in a plant community as part of the ecosystem and biosphere we live in. The ultimate realization by the student is that plants are part of the health, art, science and business of everyday life.

Course Texts and/or Other Study Materials: Selected Bibliography (Attached)
Supplemental Lecture & Laboratory Materials: Supplied by Instructor(s)
Research, Writing, and/or Exam Requirements:
Examinations: Testing material will be based on information presented and discussed in both lecture and lab.
Group Projects: In a group setting, students will explore and examine the physical and psychological relationships between people and plants. Investigation of surveys, research studies, and current environmental issues will be emphasized. Students will be required to make a group presentation.
Individual Projects: Students will be required to submit a notebook (one week before classes end) with journal entries for all lab activities including development of hypotheses, materials and methods, results, conclusions, and discussion. All field trips will have entries made detailing sites visited, contact people met (presenter) and the specific role particular plants played in the observed community or industry.
Students will create and present a poster project based on a food, fiber, or medicinal plant.
Students will research and present selected information about a famous person who has contributed to the study and/or use of plants in our culture (i.e., Darwin, mendel, Olmstead, Muir).
BIBLIOGRAPHY:


Required Reading:  The Tuesday Science Section of the New York Times.