

1. EDIBLE BOTANY – BIO 145

Course Description

From the dawn of human history plants have played an integral role in human societies across the world. This introductory botany course focusing on edible plants is aimed at enhancing your understanding of and appreciation for the plant world. We will cover general plant anatomy, morphology, chemistry and physiology focusing on plant organs such as leaves, stems, flowers, fruits, seeds, and roots we use as food, beverages, medicine, psychoactive drugs, and spices and discuss the botany and history of plants dominating agriculture, here in California and around the world. The role of plants in human nutrition will be discussed in detail, especially to provide a base to appreciate the value of plants in one's diet. You will be introduced to the taxonomy of major edible plant families of the world, including Solanaceae (potato family), Poaceae (rice family), Fabaceae (bean family), Brassicaceae (cabbage family), Asteraceae (sunflower family), and Rosaceae (apple family), among others. The future ecological, economic and social implications of our dependency on edible plants will also be discussed in light of current threats to plants and their native habitats, including threats to plant-human relations in traditional societies. Evaluations are based on "mystery plant" presentations, weekly quizzes, short homework assignments, laboratory-based mid-term and final examinations, final oral presentation, a native edible plant recipe to be created and presented during a class potluck, and general participation.

Prerequisite: Biol 1 and an appreciation for the plants we eat.

Lectures: 2 x 1.5 hrs per week (Mon, Wed 1030-12)

Laboratory: 3 hrs per week (Wed 230-530) and monthly weekend field trips

Required Text: *Economic Botany. Plants in our world.* Third Edition.

Additional Readings: *Plants and Society, Chilies to Chocolate: Food the Americas gave the world, The Botany of Desire, The Omnivores Dilemma, Plants, people, and culture: The science*

of ethnobotany, Ethnobotany: evolution of a discipline, Applied ethnobotany: people, wild plant use, and conservation.

Primary objectives of the course

- 1) Gain an appreciation for the plants (and mushrooms) we use as food, beverages, spices, medicine, and psychoactive drugs and recognize the value of plants in human nutrition
- 2) Learn the basics of the plant body: morphology & anatomy of leaves, stems, roots, flowers, and fruit
- 3) Learn the basics of plant taxonomy via examining the plant families dominating local and global agriculture
- 4) Learn about plant-people relations of edible plants from here and far away
- 5) Learn about the past, present, and future of edible plants



Taking a closer look at those ovaries we call *FRUIT!*

This course will be a pre-requisite to two courses I plan to teach 2010 onwards: Ethnobotany (with a field component in Sri Lanka) and Plant Taxonomy (BOT 104).

2) Plant Biology (Biology 1)

In this course, you will learn basic concepts of plant biology and gain skills of scientific investigation. The course is designed to cover a broad range of topics relating to plant biology and plant-people relations. Topics covered include morphology and anatomy of plants, cellular structure and types of plant cells, internal (hormones) and external (environment) factors regulating plant growth, photosynthesis and respiration, uptake and transport of water and other substances in plants, the roles and processes of different types of cell division in plants, Mendelian genetics and extensions, natural selection and evolution, characteristics of major plant lineages of non-vascular and vascular plants, ecology of plant species and communities, and ethnobotany. The course consists of two lectures and one three-hour laboratory meeting per week. Students will also gain hands-on experiences via weekend field trips and weekly gardening sessions in the [SJSU Botany Garden](#).

Prerequisite: Eligibility for CHEM 1A and eligibility for ENGL 1A per EPT. Grade of “C” required for BIOL 2, BIOL 3, and courses that require BIOL 1.

[Greensheets and Course Materials](#)



Bio 1 students examining the flowers of a lupine at Edgewood Preserve, San Mateo County, CA