Opportunities for Students

To prepare for a career in Sustainable and Organic Production, a broad spectrum of basic coursework prepares students to manage these complex agro-systems. Students learn the fundamentals of tropical crop and soil science, basic horticulture, entomology, weed science, plant disease, and crucial business skills required for today’s successful agri-entrepreneurs. Expanding on these fundamental topics, students then specialize in a specific production area. CTAHR offers a wide array of selections for specialization, ranging from organic food crops, vegetables, tropical fruits, taro and Hawaiian medicinals. For those interested in working in the landscaping industry, production classes in flower crops, foliage production and turf management are available.

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SOFT: Sustainable & Organic Farm Training
http://www.ctahr.hawaii.edu/sustainag/SOFT/

Sustainable and Organic Agriculture Program
http://www.ctahr.hawaii.edu/sustainag/student.html

Students participating this program have access to three different locations for growing herbs, fruits and vegetables. Experienced instructors and advisors representing the many disciplines of CTAHR instruct and guide them throughout the production process, from seed to sale. Students give back to our community by giving presentations and providing workshops for the community. You may see our students at events such as "Ag in the City", the Hawai'i State Farm Fair and CTAHR's events.
CTAHR Coursework in Sustainable and Organic Production

Using a creative combination of lectures, invited guest speakers, special projects and local farm visits, classes offered by CTAHR exposes students to an enriched and stimulating educational environment that combines both science-based theory and hands-on practicum. Some courses currently offered include:

**Fundamentals of Soil Science** TPSS 304 (4 credits): Origin, development, properties, management of tropical soils; classification of Hawaiian soils. A-F only. Pre: one of CHEM 151, CHEM 161, CHEM 171 or CHEM 181A; or consent. (Cross-listed as NREM 304)

**Tropical Crop Science** TPSS 200 (3 credits): Relation of plants, nutrients, and environment, cultural practices to tropical crop production.

**Organic Crop Production** TPSS 220 (2 credits): Combined lecture/lab on the theory and practice of certified organic food production. Field visits to organic farms/markets included. Open to non-majors. Fall only.

**Humans, Animals, and Agriculture** ANSC 200 (3 credits): Introduction to animal agriculture, animal science, and the use of animals by humans. Ethics and importance of human use of animals in agriculture are emphasized.

**Herbs, Spices and Flavorings** TPSS 120C (1 credit): Learn about the culinary, medicinal, and traditional uses of herbs. This class visits the herb garden used by the culinary program at Kapiolani Community College.

**Introduction to Environmental Science** PEPS/NREM 210 (3 credits): Analysis of our environment with emphasis on understanding relationships and interactions of physical, biological, technological, and political components using scientific methods of inquiry. Food supply and safety, water quality, pollution control, biodiversity, environmental policy. Open to non-majors. (Cross-listed as NREM 210)

**Enterprise Management** TPSS 351 (3 credits): Overview of financial tools essential for developing new enterprises, analyzing business performance, obtaining bank financing, improving profitability and reducing risk. Other topics: personnel management, taxation, and business plans. (Students will become proficient with Excel.) Pre: Upper division or graduate status.

**Humans, Food, and Animals: Ethics, Issues, and Controversies** ANSC/FSHN 350 (3 credits): Ethical issues and other controversies related to human and animal needs; their impact on resource sustainability and quality of life are explored from scientific perspectives. Pre: 200 or 201 or FSHN 181 or FSHN 185. (Cross-listed as FSHN 350)

**General Entomology** PEPS 363 (3): Biology, ecology, habits, structure of Hawaii's insects/arthropods. Classification to family level. A-F only. Prerequisites: ZOOL 101, BOT 101, or consent.

**Horticultural Practices** TPSS 364 (2 credits): Techniques of culture and management of horticulture crops. Pre: TPSS 200 (or concurrent).

**Tropical Forestry/Agroforestry** NREM 380 (3 credits): Biophysical and socioeconomic description and analysis of major tropical forestry and agroforestry management systems, including Hawai'i and the Pacific Basin. The role of traditional land use, pressures from regional and global development, and efforts to create sustainable, diverse systems for rural communities will be discussed. Pre: CHEM 151 or higher and BIOL 171 or higher.

**Vegetable Production** TPSS 401 (3 credits): This course introduces crop biology, requirements, and sustainable production techniques for commercial vegetable production in Hawai'i. The laboratory component of this class will require multiple field trips to local farms to learn about vegetable production techniques.

**Tropical Fruit Production** TPSS 403 (3 credits): Botanical aspects and horticultural management practices of selected tropical and subtropical fruit crops, with emphasis on small scale commercial production in Hawaiian. Pre: TPSS 300 or consent.

**Plant Pathogens and Diseases** PEPS 405 (4 credits): Classification, morphology, ecology, and biology of bacteria, fungi, nematodes, and viruses that attack economic crops. Etiology and control of plant diseases. Pre: 210 or BOT 101 or MICR 130, or consent. Fall only.

**Weed Science** TPSS 481 (3 credits): Weed classification, identification, adaptations for weediness; principles of weed control; properties, uses, and action of herbicides. Lab: pesticide application equipment and techniques, no till farming, greenhouse and field experiments. Pre: TPSS 200 and CHEM 152.

**The Science of Food Systems** ANSC 601/FSHN 601 (2 credits): Discussion of food systems as they apply to animal science, food science, and human nutrition. Repeatable one time. Pre: graduate standing or consent.

**Sustainable Agriculture Seminar** NREM 631 (2 credits) Critical evaluation of existing and alternative cropping systems from a long-term perspective. Value conflicts and resolution. Pre: graduate standing or advanced undergraduate standing, and consent.

Electives available to support coursework in Sustainable and Organic Production are extremely rich and diverse and may include topics from plant breeding and physiology, tissue culture and seed science to la'au lapa'au (Hawaiian medicinal herbs) and taro cultivation.