

HORTICULTURAL SCIENCES

ALS 5932 Special Topics 1-4 Credits, Max 6 Credits

Grading Scheme: Letter Grade

Special Topics

HOS 5085C Principles of Postharvest Horticulture 3 Credits

Grading Scheme: Letter Grade

Biological principles involved in harvesting, grading, packaging, transportation, and marketing horticultural crops, and their effects on quality maintenance. Offered even-numbered years in fall.

Prerequisite: BOT 3503 and BCH 3023 or equivalent.

HOS 5242 Genetics & Breeding of Vegetable Crops 3 Credits

Grading Scheme: Letter Grade

Traditional and molecular breeding methods for vegetable crops and the influence of scientific research, government policies, and consumer preferences on vegetable crop improvement.

Prerequisite: AGR 3303 or equivalent.

HOS 5330 Postharvest Technologies for Horticultural Crops 2 Credits

Grading Scheme: Letter Grade

Intensive study of current technologies and procedures for harvesting and handling fresh fruit, vegetable, and ornamental crops grown in Florida. Requires field trip during spring break. Offered in spring.

Prerequisite: HOS 5085C suggested. Open to graduate students and to upper-division undergraduate students with consent of instructor.

HOS 5505 Getting Published Horticulture 3 Credits

Grading Scheme: Letter Grade

Presents techniques for writing journal manuscripts to submit to horticulture, plant related, and agricultural journals. Topics covered include selecting a journal, writing the introduction, materials and methods, results, discussion as well as how to present data in addition to responding to rejection letters, manuscript revisions, and providing constructive reviews.

HOS 5555 Tropical Fruit Production and Research in Florida 3 Credits

Grading Scheme: Letter Grade

A comprehensive study at the Tropical Research and Education Center at Homestead and field locations in South Florida. (Students will be in residence for 4 weeks at the Center.) Offered even-numbered years in summer.

HOS 5711 Phytochemicals in Food & Health 3 Credits

Grading Scheme: Letter Grade

This course examines phytochemicals in fruits and vegetables including their distribution, roles in human health promotion, biosynthesis and degradation, enzymes, genes and case studies of crop breeding and engineering.

Prerequisite: BCH 4024 or equivalent or consent of instructor.

HOS 6201 Breeding Perennial Cultivars 3 Credits

Grading Scheme: Letter Grade

Methods of breeding perennial fruit and ornamental cultivars using mutations, cell and tissue culture, polyploidy, recurrent selection, and wide hybridization. Conservation and domestication of wild plants. Offered odd-numbered years in fall.

Prerequisite: AGR 3303.

HOS 6236 Molecular Marker Assisted Plant Breeding 3 Credits

Grading Scheme: Letter Grade

Providing an overview of terminology, methodology, and applied examples of utilizing molecular markers in a plant breeding program.

HOS 6307 Horticultural Physiology 3 Credits

Grading Scheme: Letter Grade

Covers basic plant physiology concepts in fruit and vegetable crops emphasizing horticultural applications. Topics include water uptake and transport, ion uptake, photosynthesis, respiration, and source-sink relations.

Prerequisite: Graduate status.

HOS 6331 Postharvest Biology 3 Credits

Grading Scheme: Letter Grade

Physiological, biochemical, and molecular aspects of senescence and ripening of harvested fruit, vegetative, and floral organs with attention to the storage and quality maintenance of harvested plant organs.

Prerequisite: BOT 3503 and BOT 5505C or equivalents.

HOS 6345 Environmental Physiology 4 Credits

Grading Scheme: Letter Grade

Physiology from molecular to whole-plant level. The basis for responses to environmental factors such as light, temperature, water, atmosphere, and stress extremes. Offered even-numbered years in fall.

Prerequisite: BOT 3503 or consent of instructor.

HOS 6355 Root and Rhizosphere Ecology 3 Credits

Grading Scheme: Letter Grade

The course provides a complete view of the rhizosphere and its unique functioning that implies numerous, strong and complex interactions between plant roots, soil constituents and microorganisms.

HOS 6412 Nutrition of Horticultural Crops 3 Credits

Grading Scheme: Letter Grade

Physiological, biochemical and environmental factors influencing nutritional status of horticultural plants and the resulting effects on growth, yield, and quality. Offered odd-numbered years in spring.

Prerequisite: BOT 3503 and HOS 4304 or equivalent.

HOS 6545 Advanced Citriculture I 3 Credits

Grading Scheme: Letter Grade

Regulation of citrus vegetative growth including climactic, physiological, and cultural factors. Offered odd-numbered years in the fall at Lake Alfred CREC.

Prerequisite: FRC 3212 and 4223 or equivalent.

HOS 6905 Problems in Horticultural Science 1-4 Credits, Max 8 Credits

Grading Scheme: Letter Grade

Independent study.

HOS 6910 Supervised Research 1-5 Credits, Max 5 Credits

Grading Scheme: S/U

Supervised Research

HOS 6931 Horticultural Science Seminar 1 Credit, Max 3 Credits

Grading Scheme: S/U

Oral presentation of material in one of the following areas: literature review, related to student's research; research results; or published paper, of relevance to horticulture. Subject matter determined by instructor. Offered in spring.

HOS 6932 Special Topics 1-4 Credits, Max 8 Credits

Grading Scheme: Letter Grade

Study of contemporary research in horticultural science.

HOS 6934 Professional Seminar Preparation 1 Credit

Grading Scheme: Letter Grade

Preparation and oral presentation of proposal and research seminars emphasizing presentation design and mechanics.

HOS 6940 Supervised Teaching 1-5 Credits, Max 5 Credits

Grading Scheme: Letter Grade

Supervised Teaching

HOS 6941 Practicum in Horticultural Science 2-4 Credits, Max 8 Credits

Grading Scheme: Letter Grade

Supervised and individual work in professional areas of horticulture.

Prerequisite: admission is limited to graduate students majoring in horticultural science.

HOS 6971 Research for Master's Thesis 1-15 Credits

Grading Scheme: S/U

Research for Master's Thesis

HOS 7979 Advanced Research 1-12 Credits

Grading Scheme: S/U

Research for doctoral students before admission to candidacy. Designed for students with a master's degree in the field of study or for students who have been accepted for a doctoral program. Not appropriate for students who have been admitted to candidacy.

HOS 7980 Research for Doctoral Dissertation 1-15 Credits

Grading Scheme: S/U

Research for Doctoral Dissertation

PCB 5065 Advanced Genetics 4 Credits

Grading Scheme: Letter Grade

Examines genetic principles including gene and gene function; recombination and linkage; molecular markers, multipoint linkage analysis, and positional cloning; and quantitative, population, developmental, and non-Medalian genetics. Offered in fall term.

Prerequisite: AGR 3303 or PCB 3063 and BCH 4024 or BCH 5045. For graduate students in any life science discipline.

PCB 5530 Plant Molecular Biology and Genomics 3 Credits

Grading Scheme: Letter Grade

Integrated overview of the fundamental mechanisms enabling plant growth, development, and function, and approaches to study these at molecular level. Topics include replication, repair, transcription, translation, cell cycle, transformation, gene tagging, structural genomics, proteomics, and metabolomics. Offered in fall term.

Prerequisite: undergraduate molecular biology or biochemistry.

PCB 6528 Plant Cell and Developmental Biology 3 Credits

Grading Scheme: Letter Grade

Cellular and developmental biology of plants. Lecture format with frequent discussion of recent papers. Topics include signal transduction, organelles, protein trafficking, and developmental mechanisms. Offered in spring term.

Prerequisite: PCB 5530 and PCB 5065 or equivalent.

PCB 6910 Supervised Research 1-5 Credits, Max 5 Credits

Grading Scheme: S/U

Supervised Research

PCB 6937 Special Topics in Plant Molecular and Cellular Biology 1-4 Credits, Max 8 Credits

Grading Scheme: Letter Grade

Contemporary research.

Prerequisite: graduate course work in genetics, biochemistry, or molecular biology areas.

PCB 6971 Research for Master's Thesis 1-15 Credits

Grading Scheme: S/U

Research for Master's Thesis

PCB 7922 Journal Colloquy in Plant Molecular and Cellular Biology 1 Credit, Max 8 Credits

Grading Scheme: Letter Grade

Critical discussion and presentation of recent journal articles in the area of plant molecular and cellular biology.

Prerequisite: Required for PCMB majors.

PCB 7979 Advanced Research 1-12 Credits

Grading Scheme: S/U

Research for doctoral students before admission to candidacy. Designed for students with a master's degree in the field of study or for students who have been accepted for a doctoral program. Not appropriate for students who have been admitted to candidacy.

PCB 7980 Research for Doctoral Dissertation 1-15 Credits

Grading Scheme: S/U

Research for Doctoral Dissertation

PLS 7979 Advanced Research 1-12 Credits

Grading Scheme: S/U

Research for doctoral students before admission to candidacy. Designed for students with a master's degree in the field of study or for students who have been accepted for a doctoral program. Not appropriate for students who have been admitted to candidacy.

PLS 7980 Research for Doctoral Dissertation 1-15 Credits

Grading Scheme: S/U

Research for Doctoral Dissertation.

Prerequisite: Student must be admitted to candidacy.

WDS 6005 Weed Management for Organic and Sustainable Cropping Systems 3 Credits

Grading Scheme: Letter Grade

Ecological principles can be applied in agroecosystems to manage weeds sustainably. Alternative weed management approaches that are less dependent on herbicides and utilize ecological processes detrimental to weeds and their propagules will be emphasized. Students will learn actively by critically analyzing pertinent literature and participating in discussions of supplemental reading.

Prerequisite: HOS 3020C or ALS 3153.