Plant Science (PLSC)

plantscience.uconn.edu

5150. Design and Analysis of Agricultural Experiments

Four credits. Prerequisite: Instructor consent. Recommended preparation: introductory college-level statistics.

Design and analysis of experiments commonly conducted in agricultural field, greenhouse, and laboratory research. Emphasis on replicated treatment experiments based on completely random, randomized block, Latin square, split-plot, and split-block designs. Limited coverage of non-replicated treatment observational-type experiments. Statistical analyses performed primarily in SAS (Statistical Analysis System) software. Presentation of summarized data using computer generated graphics from various software packages.

5210. Molecular Laboratory Technology

Three credits. Prerequisite: Instructor consent. Not open for credit to students who have passed PLSC 3210.

Laboratory technologies for identification and characterization of molecules important for molecular biology research, genetic manipulation and disease diagnosis. Labs will provide hands-on experience performing basic molecular biology techniques, lectures will cover theoretical basis and application.

5245. Plant Breeding and Biotechnology

Three credits. Prerequisite: One of BIOL 1108, 1102, 1110; MCB 2410; SPSS 3210, 3230, 4210, or instructor consent. Not open for credit to students who have passed PLSC 3240.

Principles and applications, economic, social and environmental impacts, advantages, potentials and limitations of major traditional and modern plant breeding technologies including crossing/hybridization, polyploidy, mutagenesis, genetic engineering and genome editing.

5255. Modern and Traditional Plant Breeding Techniques

Three credits. Prerequisite: PLSC 5245. Not open for credits to students who have passed PLSC 5250 or SPSS 3250.

Hands-on experiments for traditional and modern plant breeding techniques, including artificial crossing/hybridization, polyploidy induction, plant tissue culture and transgenic plant production, and radiation- and genome editing-mediate mutagenesis.

5260. Transdisciplinary Research and Participatory Design in Landscape Architecture

Three credits. Prerequisite: Instructor consent.

Theory-based lecture course exploring how trans-disciplinary research and community based participatory research can help create a predictable and equitable environment for development decisions. Field trips required.

5270. Global Perspectives in Landscape Architecture

Three credits. Prerequisite: Instructor consent.

Examination of the historic development and contemporary practice of landscape architecture across cultural and ecological international divides. Understanding of how the global age impacts landscape design, community planning, and sustainability frameworks.

5410. Soil Chemistry Components

Four credits. Not open to students that have passed SPSS 3420 or SOIL 3410.

Basic concepts of the physical chemistry of soil constituents. Topics include soil atmospheres, soil solutions, soil organic matter, soil mineralogy, and surface characteristics and analysis. Term paper required.

5420. Soil Chemistry Reactions and Equilibrium

Three credits.

Physical chemical characteristics of soil minerals and soil organic matter, and their reactivity with compounds present in the aqueous and vapor phase. Topics include: redox reactions, adsorption and desorption measurements, electrokinetics, adsorption modeling, and physicochemical principles of soil modification and remediation practices. Term paper required.

5460. Sustainable Site Design

Five credits. Prerequisite: Instructor consent. Recommended preparation: environmental design coursework and familiarity with digital design programs.

Studio-based course covering environmental, cultural, social, economic dimensions of designing sustainable outdoor sites. Conceptual planning to detailed design and analysis of regenerative site systems over a range of contexts from urban to rural sites, using qualitative and quantitative methods. Applications on service-learning and engaged scholarship projects. Field trips required.

5470. Sustainable Coastal Land Use Planning

Five credits. Prerequisite: Instructor consent. Recommended preparation: environmental design coursework and familiarity with digital design programs.

Studio-based course exploring the relationship between sea level rise and the necessary adaptation of society's development patterns. The majority of the course will focus on individual student planning projects. Service learning opportunities. Field trips required.

5620. Soil Fertility

Three credits.

Factors governing nutrient uptake by plants, fate of nutrients applied to soils, principles and practices in the use of fertilizers and amendments for crop production, laboratory and field studies of social and plant response to applied nutrients.

5820. Ecology and Control of Weeds

Three credits. Not open to students who have passed SPSS 3820.

Weed identification, origin and classification. Losses caused by weeds. Weed competition. Weed seed production, dormancy, and germination. Weed growth and development. Weed biology and life cycles. Cultural, mechanical, and biological weed control methods based on ecological principles. Overview of chemical weed control practices and associated environmental and ecological risks.

5897. Seminar

One credit. May be repeated for a total of two credits. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

5898. Topics in Plant Science

Variable (1-6) credits. Prerequisite: Instructor consent. May be repeated for credit.

Topics and credits to be published prior to the registration period preceding the semester offerings.

5899. Independent Study

Variable (1-6) credits. Prerequisite: Instructor consent. May be repeated for credit.