

PLANT SCIENCE (PLSC)

PLSC 5150. Design and Analysis of Agricultural Experiments. (4 Credits)

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.

Enrollment Requirements: Recommended Preparation: Introductory college-level statistics.

PLSC 5210. Molecular Laboratory Technology. (3 Credits)

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.

Enrollment Requirements: Not open to students who have passed PLSC 3210.

Content Areas: CA3LAB: Science & Tech Lab

Topics of Inquiry: TOI6L: Science Emp Inq (Lab)

PLSC 5245. Plant Breeding and Biotechnology. (3 Credits)

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.

Enrollment Requirements: One of BIOL 1102, 1108, 1110; MCB 2410; PLSC 3210, 3230, 4210, or instructor consent.

PLSC 5255. Modern and Traditional Plant Breeding Techniques. (3 Credits)

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.

Enrollment Requirements: PLSC 5245.

PLSC 5410. Soil Chemistry Components. (4 Credits)

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.

Enrollment Requirements: Not open for credit to students who have passed PLSC 3420.

PLSC 5620. Soil Fertility. (3 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 soil and plant response to applied nutrients.

PLSC 5700. Soil Morphology. (3 Credits)

Course covers the main components of soil morphology that include horizonation, soil texture, soil color, redoximorphic features, structure and consistence. This includes describing all that can be seen and felt about different soils in the field and learning how to create a standard soil description.

Enrollment Requirements: Instructor consent and PLSC 2120, PLSC 2125 or PLSC 1300.

PLSC 5820. Ecology and Control of Weeds. (3 Credits)

Weed identification. Weed 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.

Enrollment Requirements: Not open to students who have passed PLSC 3820.

PLSC 5890. Soil Management, Soil Health, and Climate Change. (3 Credits)

This course teaches the following knowledge in the agricultural production systems: concept of soil health, measurements of soil health, carbon cycling and its impact on soil health, nitrogen cycling and its impact on soil health, nutrient management in livestock production systems, soil health and climate, plant and soil management practices impact on soil health.

Enrollment Requirements: PLSC 1300 or PLSC 2120 or PLSC 3620.

PLSC 5895. Special Topics. (1-6 Credits)

May be repeated for a total of 12 credits

PLSC 5897. Seminar. (1 Credit)

May be repeated for a total of 2 credits

PLSC 5898. Variable Topics in Plant Science. (1-6 Credits)

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

May be repeated for a total of 24 credits

PLSC 5899. Independent Study. (1-6 Credits)

May be repeated for a total of 24 credits