

PLANT SCIENCE (PLSC)

PLSC 1020 The Science of Plants in Agriculture (3 credits)

Principles of structure, biology, and management of agronomic and horticultural crops; interaction of crop plants and cropping systems with environment; current issues related to plant science. Two lectures and one 2-hour lab per week. Typically Offered: Fall.

PLSC 2010 Principles of Horticulture (3 credits)

An introduction to the production and management of edible and ornamental horticultural crops and the maintenance of plants and turf in urban landscapes. Two lectures and two hours of lab per week; two field trips. Typically Offered: Fall.

Prereqs: PLSC 1020

PLSC 2040 (s) Special Topics (1-16 credits, max 99)

Credit arranged

PLSC 2050 General Botany (4 credits)

Growth, development and ecology of plants, fungi, and protists in relation to their environments. Recommended Preparation: CHEM 1101 and PLSC 1020. Typically Offered: Spring.

Prereqs: BIOL 1140 or BIOL 1150

PLSC 2070 Introduction to Biotechnology (3 credits)

Cross-listed with GENE 2070

Offers an overview of modern biotechnology, focusing on basic concepts and applications of biotechnology with regards to plants, animals, environment and microorganisms, and medicine. Recommended preparation: CHEM 1101 or CHEM 1111. Typically Offered: Fall (Even Years).

PLSC 2120 Master Gardener (1-3 credits, max 3)

Basic horticultural skills required for home gardeners and landscapers, including soil, water, and fertility management, composting, pest and disease identification and management, vegetable and fruit culture, ornamentals, plant propagation, and lawn care. Field trips. Graded Pass/Fail.

PLSC 3000 Plant Propagation (3 credits)

Sexual and asexual propagation techniques of herbaceous and woody ornamental plants; propagation methods covered including seed, cuttings, layering, grafting, and cloning/tissue culture. Two lectures and one 3-hour lab per week. Typically Offered: Spring (Even Years).

Prereqs: PLSC 1020, PLSC 2010, or BIOL 1150.

PLSC 3070 Agronomy (3 credits)

This course provides students with the general principles of field crop production in the Pacific Northwest and throughout the US production regions. Specific topics include plant anatomy and morphology, plant physiology, agroecosystems, soil and nutrients, cropping systems, agronomic practices, pest management, and introductions of major agronomic crops. Typically Offered: Spring (Odd Years).

Prereqs: PLSC 1020 or PLSC 2050

PLSC 3380 Organic and Conventional Weed Management (4 credits)

Nature and scope of weed problems, biology of weeds, principles, theory, and practice of cultural, mechanical, chemical, and biological control of weeds; legal considerations; integration of methods into functional management systems. Two lectures and one 3-hour lab per week. Typically Offered: Fall.

Prereqs: PLSC 1020

PLSC 3400 Nursery Management (3 credits)

Management of commercial nurseries from plant propagation through sale of the plants. Typically Offered: Spring (Odd Years).

Prereqs: PLSC 1020, PLSC 2010, or PLSC 2050 Cooperative: open to WSU degree-seeking students.

PLSC 3980 (s) Internship (1-6 credits, max 6)

Graded Pass/Fail.

Prereqs: Department Permission

PLSC 4000 Plant Science Seminar (1 credit)

Professional presentation on a topic in plant science. Typically Offered: Fall.

Prereqs: Senior standing

PLSC 4010 Plant Physiology (3 credits)

Application of physiological principles to the management of plants in agronomic, horticultural, and forest systems. Typically Offered: Spring (Even Years).

Prereqs: PLSC 2050 or BIOL 1140 or BIOL 1150 and BIOL 1150L or Permission

PLSC 4020 Undergraduate Research in Plant Science (1-6 credits, max 6)

This course offers credits to students interested in gaining first-hand experience in today's plant research. Each student will acquire research skills by conducting laboratory or field research on a well-defined topic agreed to by the student and by a faculty supervisor. Students must receive permission from that supervisor prior to enrolling. This course is open to all undergraduates and may be taken multiple times.

Prereqs: PLSC 2050

PLSC 4040 (s) Special Topics (1-16 credits, max 99)

Credit arranged

PLSC 4050 (s) Professional Development (1-16 credits, max 99)

Credit arranged

PLSC 4080 Small Grains and Oilseed Production (3 credits)

Joint-listed with PLSC 5080

Crop history and biology of major cereal, legumes and oilseed crops; production systems of cereals, legumes, and oilseed crops commonly grown in Idaho and the Pacific Northwest; production systems of globally important cereal crops. Additional work required for graduate credit. Typically Offered: Spring (Even Years).

Prereqs: BIOL 1140, BIOL 1150, PLSC 1020, or PLSC 2050

PLSC 4100 Invasive Plant Biology (3 credits)

Joint-listed with PLSC 5100

Understanding invasive plant biology, invasion processes, and impacts will provide a foundation to create and implement integrated management programs. Specific topics include invasive plant impacts, plant invasion, interactions (plant-plant, plant-animal, plant-fungal), risk assessment, and strategies for management. Additional work required for graduate credit. Two lectures plus a one 3-hour lab. Recommended preparation: PLSC 3380 Typically Offered: Fall (Even Years)

Prereqs: FOR 2100 or PLSC 2050 or Permission Cooperative: open to WSU degree-seeking students.

PLSC 4190 Plant Community Restoration Methods (2 credits)

Students will participate in classroom discussions surrounding topics that are important to modification and implementation of a restoration plan. Students will also participate in practical, hands-on activities during laboratory periods. Those activities include operation of equipment for cultivation and seeding, calibration of herbicide sprayers, calibration of drills, transplanting techniques, monitoring and evaluation of restoration projects, and visits to restoration projects. Typically Offered: Spring.

Prereqs: REM 2210 or equivalent, or Permission

PLSC 4330 Plant Tissue Culture Techniques (3 credits)

Joint-listed with PLSC 5330

Laboratory-oriented course involving tissue culture techniques with an emphasis on regenerating herbaceous and woody plant species from organs or tissues. Additional work required for graduate credit. One lecture and 5 hours of lab per week. Recommended Preparation: PLSC 3000. Typically Offered: Spring (Odd Years).

Prereqs: PLSC 1020 or PLSC 2050

PLSC 4380 Pesticides in the Environment (3 credits)

General Education: Capstone Experience

Cross-listed with ENT 4380, SOIL 4380

Principles of pesticide fate in soil, water, and air; pesticide metabolism in plants, pesticide toxicology, and pesticide mode-mechanism of action; pest resistance to pesticides; biotechnology in pest control; regulations and liability; equipment application technology; pesticide transport, storage, and disposal; and social and ethical considerations. Recommended Preparation: CHEM 2750.

PLSC 4400 Advanced Laboratory Techniques (4 credits)

Cross-listed with GENE 4400

Intensive hypothesis-driven laboratory course that will prepare the student for research in molecular biology; emphasis on areas of microbial physiology, microbial genetics, immunology, and pathogenic microbiology. Typically Offered: Spring.

Prereqs: BIOL 2500

PLSC 4440 Forage and Grassland Management (3 credits)

Joint-listed with PLSC 5440

This course will discuss the biology of plants and the application of agronomic principles to growth, development and management of integrated forage crop and livestock systems. We will focus on pasture and grazing, alfalfa hay, cover crops, and corn silage production, management, storage, and utilization. Additional work required for graduate credit. Typically Offered: Spring (Odd Years).

Prereqs: PLSC 1020 or 2050

PLSC 4460 Plant Breeding (3 credits)

Joint-listed with PLSC 5460

Application of genetic principles for crop improvement. Course includes practical consideration for improvement of plant populations and developing crop cultivars using advanced and emerging breeding methods. Additional work required for graduate credit. Typically Offered: Spring (Odd Years).

Prereqs: PLSC 1020 or PLSC 2050.

Prereqs or Coreqs: GENE 3140 or BIOL 3100

PLSC 4510 Vegetable Crops (3 credits)

Joint-listed with PLSC 5510

Production, physiology, storage, and marketing of major and minor vegetable, herb, and spice crops from a worldwide perspective. Additional work required for graduate credit. Typically Offered: Fall (Even Years).

Prereqs: PLSC 1020 or PLSC 2050. Cooperative: open to WSU degree-seeking students.

PLSC 4760 Cell Biology (3 credits)

Joint-listed with PLSC 5760

Introduction to the organization and function of some of the major molecules that make up cells. The emphasis is on post-transcriptional regulatory processes governing cell motility, water and nutrient uptake, creation of resting and action potentials, the cell cycle, and how normal cells can be transformed into cancerous ones. Additional work required for graduate credit. Typically Offered: Spring.

Prereqs: BIOL 1150 and either BIOL 3000 or BIOL 3800

PLSC 4860 Plant Biochemistry (3 credits)

Joint-listed with PLSC 5860

An in-depth introduction to metabolic processes carried out by plants, some fungi, and some alga with emphasis on cell wall synthesis, hormone synthesis, and photosynthesis. Extra oral and/or written assignments required for graduate credit. Typically Offered: Spring (Odd Years).

Prereqs: BIOL 3000 or BIOL 3800 or Instructor Permission

PLSC 4880 Genetic Engineering (3 credits)

Cross-listed with GENE 4880

Joint-listed with GENE 5880, PLSC 5880

Techniques and theory underlying practical genetic modifications of plants, microbes, and animals. Extra oral and/or written assignments required for graduate credit. Recommended Preparation: BIOL 3800. Typically Offered: Fall.

Prereqs: GENE 3140 or BIOL 3100

PLSC 4900 Potato Science (3 credits)

Joint-listed with PLSC 5900

History, botanical characteristics, seed physiology and production, plant population, physiology of growth, and pest management; factors influencing maturation, harvest, yield, grade, bruise control, storage, and quality maintenance; economics of production and research on a global basis. Additional work required for graduate credit. Typically Offered: Fall (Odd Years).

Prereqs: PLSC 1020, PLSC 2010, or PLSC 2050. Cooperative: open to WSU degree-seeking students.

PLSC 4980 (s) Internship (1-16 credits, max 99)

Credit arranged

PLSC 4990 (s) Directed Study (1-16 credits, max 99)

Credit arranged

PLSC 5000 Master's Research and Thesis (1-16 credits, max 99)

Credit arranged

PLSC 5010 Graduate Seminar in Plant Science (1 credit, max 3)

Presentation of current topics in plant science or graduate student's thesis/dissertation project. Typically Offered: Fall and Spring.

PLSC 5020 (s) Directed Study (1-16 credits, max 99)

Credit arranged

PLSC 5030 (s) Workshop (1-16 credits, max 99)

Credit arranged

PLSC 5040 (s) Special Topics (1-16 credits, max 99)

Credit arranged

PLSC 5050 (s) Professional Development (1-16 credits, max 99)

Credit arranged

PLSC 5080 Small Grains and Oilseed Production (3 credits)

Joint-listed with PLSC 4080

Crop history and biology of major cereal, legumes and oilseed crops; production systems of cereals, legumes, and oilseed crops commonly grown in Idaho and the Pacific Northwest; production systems of globally important cereal crops. Additional work required for graduate credit. Typically Offered: Spring (Even Years).

PLSC 5100 Invasive Plant Biology (3 credits)

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PLSC 5330 Plant Tissue Culture Techniques (3 credits)

Joint-listed with PLSC 4330

Laboratory-oriented course involving tissue culture techniques with an emphasis on regenerating herbaceous and woody plant species from organs or tissues. Additional work required for graduate credit. One lecture and 5 hours of lab per week. Recommended Preparation: PLSC 3000. Typically Offered: Spring (Odd Years). Cooperative: open to WSU degree-seeking students.

PLSC 5420 Biochemistry (3 credits)

Intermediate biochemistry; introduction to metabolism and the chemical and physical properties of biomolecules. Typically Offered: Fall.

PLSC 5440 Forage and Grassland Management (3 credits)

Joint-listed with PLSC 4440

This course will discuss the biology of plants and the application of agronomic principles to growth, development and management of integrated forage crop and livestock systems. We will focus on pasture and grazing, alfalfa hay, cover crops, and corn silage production, management, storage, and utilization. Additional work required for graduate credit. Typically Offered: Spring (Odd Years).

PLSC 5460 Plant Breeding (3 credits)

Joint-listed with PLSC 4460

Application of genetic principles for crop improvement. Course includes practical consideration for improvement of plant populations and developing crop cultivars using advanced and emerging breeding methods. Additional work required for graduate credit. Typically Offered: Spring (Odd Years).

PLSC 5510 Vegetable Crops (3 credits)

Joint-listed with PLSC 4510

Production, physiology, storage, and marketing of major and minor vegetable, herb, and spice crops from a worldwide perspective. Additional work required for graduate credit. Typically Offered: Fall (Even Years). Cooperative: open to WSU degree-seeking students.

PLSC 5760 Cell Biology (3 credits)

Joint-listed with PLSC 4760

Introduction to the organization and function of some of the major molecules that make up cells. The emphasis is on post-transcriptional regulatory processes governing cell motility, water and nutrient uptake, creation of resting and action potentials, the cell cycle, and how normal cells can be transformed into cancerous ones. Additional work required for graduate credit. Typically Offered: Spring.

PLSC 5860 Plant Biochemistry (3 credits)

Joint-listed with PLSC 4860

An in-depth introduction to metabolic processes carried out by plants, some fungi, and some alga with emphasis on cell wall synthesis, hormone synthesis, and photosynthesis. Extra oral and/or written assignments required for graduate credit. Typically Offered: Spring (Odd Years).

PLSC 5880 Genetic Engineering (3 credits)

Cross-listed with GENE 5880

Joint-listed with GENE 4880, PLSC 4880

Techniques and theory underlying practical genetic modifications of plants, microbes, and animals. Extra oral and/or written assignments required for graduate credit. Recommended Preparation: BIOL 3800. Typically Offered: Fall.

PLSC 5900 Potato Science (3 credits)

Joint-listed with PLSC 4900

History, botanical characteristics, seed physiology and production, plant population, physiology of growth, and pest management; factors influencing maturation, harvest, yield, grade, bruise control, storage, and quality maintenance; economics of production and research on a global basis. Additional work required for graduate credit. Typically Offered: Fall (Odd Years). Cooperative: open to WSU degree-seeking students.

PLSC 5970 (s) Practicum (1-16 credits, max 99)

Credit arranged

PLSC 5980 (s) Internship (1-16 credits, max 99)

Credit arranged

PLSC 5990 (s) Research (1-16 credits, max 99)

Credit arranged. Research not directly related to a thesis or dissertation. **Prereqs:** Permission

PLSC 6000 Doctoral Research and Dissertation (1-45 credits, max 99)

Credit arranged