

PLANT SCIENCE (PLSC)

PLSC 1000E. Plant Appreciation. (3 Credits)

An introductory exploration of humans' multi-faceted and essential relationship with plants. Examination of biology, ecology, cultivation, utility in design, and use in food, medicine, and recreation.

Skill Codes: COMP Environmental Literacy

Content Areas: CA3: Science & Technology

Topics of Inquiry: TOI4: Environmental Literacy, TOI6: Science & Empirical Inq

PLSC 1060E. The Great American Lawn: History, Culture, and Sustainability. (3 Credits)

Examination of the health, social, cultural, and environmental impacts of the largest irrigated crop in the U.S. CA 2. CA 3. Formerly offered as SPSS 1060.

Skill Codes: COMP Environmental Literacy

Content Areas: CA2: Social Science, CA3: Science & Technology

Topics of Inquiry: TOI4: Environmental Literacy, TOI6: Science & Empirical Inq

PLSC 1100. Turfgrass Management. (3 Credits)

An overview of turfgrass adaptation, selection, and management. Topics include turfgrass growth, physiology, soil interactions, establishment, and maintenance. Cultural system practices for lawns, golf courses, athletic fields, and other turf areas. Turfgrass pest management practices for weeds, insects, and diseases. Taught with SAPL 110. Formerly offered as SPSS 1100.

Enrollment Requirements: May not be taken out of sequence after passing PLSC 3150.

PLSC 1110. Fundamentals of Horticulture. (3 Credits)

Science and practice of horticultural plant propagation and culture. Basic concepts of plant structure, growth and function. Integrated pest management. Impact of new technology. Horticulture and the environment. Formerly offered as SPSS 1110.

PLSC 1115. Turfgrass Management Lab. (1 Credit)

Grass establishment, grass identification, athletic field turfgrass playability evaluations, soil testing, turfgrass pest identification, turfgrass pest monitoring techniques, and fertilizer spreader and sprayer calibration. Formerly offered as SPSS 1115.

Enrollment Requirements: PLSC 1100, which may be taken concurrently.

PLSC 1120. Introduction to Plant Science. (4 Credits)

Basic concepts of plant anatomy and physiology in production of agricultural and horticultural crops. Developmental stages of crop plants from seed through vegetative growth and flowering to harvest. Included topics are mineral nutrition, water relations, photosynthesis, respiration, reproduction, tropisms, climate effects, and breeding and development of improved crop plants. Relationships between the physiology of plants and crop production practices. Taught with SAPL 120. Formerly offered as SPSS 1120.

PLSC 1125E. Insects, Food and Culture. (3 Credits)

Introduction to the fascinating world of insects and their ubiquitous interactions with people. Role of insects in food and fiber production; insects as food; impact of insects on human health, commerce and history; and insects as inspiration sources for art, music, film and literature around the world. CA 4-INT. Formerly offered as SPSS 1125.

Skill Codes: COMP Environmental Literacy

Content Areas: CA4INT: Div & Multi - Intl

Topics of Inquiry: TOI2: Cultural Dimen Human Exp, TOI4: Environmental Literacy

PLSC 1150. Agricultural Technology and Society. (3 Credits)

Development of agricultural systems and technologies and their influence on societies. Topics include plant and animal domestication, food and industrial crops and centers of production, environmental issues, and agricultural ethics. CA 3. Formerly offered as SPSS 1150.

Content Areas: CA3: Science & Technology

Topics of Inquiry: TOI2: Cultural Dimen Human Exp, TOI5: Indiv Values Soc Inst

PLSC 1300. Introduction to Soil Science. (3 Credits)

Physical and chemical properties of soils; nature and use of fertilizer and liming materials; management of soils for crop production including soil testing, tillage, fertilization practices, and conservation practices. Taught with SAPL 300. Formerly offered as SPSS 1300.

Enrollment Requirements: Not open to students who have passed PLSC 2120.

PLSC 2100E. Environmental Sustainability of Food Production in Developed Countries. (3 Credits)

Foundations of modern food production systems that produce the majority of calories consumed in North America and other developed countries. Benefits and environmental risks associated with modern food production systems. Alternative food production systems and sustainability. Local food production and food security. Food production and climate change. Formerly offered as SPSS 2100E.

Skill Codes: COMP Environmental Literacy

Topics of Inquiry: TOI2: Cultural Dimen Human Exp, TOI4: Environmental Literacy

PLSC 2110W. Sustainable Plant Pest Management Communication. (1 Credit)

Communication of the impacts, economic importance, identification, and sustainable management of new and emerging plant pests, such as insects, mites, weeds/invasive plants, and diseases of food and non-food (ornamental) crops, in agricultural and landscape settings. Connections with UConn Extension and real-world pest occurrences will be incorporated. Formerly offered as SPSS 2110W.

Enrollment Requirements: ENGL 1007 or 1010 or 1011; open only to Plant Science, Horticulture, or Turfgrass Science majors.

Skill Codes: COMP Writing Competency

PLSC 2120E. Environmental Soil Science. (3 Credits)

Introduction to the physical, chemical, and biological properties of soils. The relationship between soils and the growth of higher plants. Impact of soils on environmental quality.

Enrollment Requirements: CHEM 1122 or CHEM 1124Q or CHEM 1127Q or CHEM 1137Q or CHEM 1147Q. May not be taken out of sequence after passing PLSC 3620.

Skill Codes: COMP Environmental Literacy

Content Areas: CA3: Science & Technology

Topics of Inquiry: TOI4: Environmental Literacy, TOI6: Science & Empirical Inq

PLSC 2125. Environmental Soils Lab. (1 Credit)

Soil science laboratory with an emphasis on environmental issues, Analyses of soil physical, biological and chemical properties. Includes weekday and weekend field trips. Formerly offered as SPSS 2125.

Enrollment Requirements: PLSC 2120, which may be taken concurrently.

Content Areas: CA3LAB: Science & Tech Lab

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

PLSC 2130. Introduction to the Horticulture of Cannabis. (3 Credits)

Fundamentals of the production cycle of Cannabis including horticultural management, identification of crop issues, elite feminized seed production, seed propagation, vegetative propagation, pruning, training, optimization of cannabinoid content, and post-harvest handling. Overviews of Cannabis business operations world-wide and in Connecticut, exploring lab testing procedures, cannabidiol extraction technologies, the Connecticut medical marijuana program, and government regulation of the industry. Taught with SAPL 130. Formerly offered as SPSS 2130.

Enrollment Requirements: Recommended preparation: PLSC 1120 or BIOL 1110.

PLSC 2210. Golf Course Management. (3 Credits)

Cultural management techniques including soil aeration, topdressing, mowing, thatch removal, grass or species selection, fertilization, irrigation and management of personnel, pests, equipment and inventory. Field trips required. Taught with SAPL 210. Formerly offered as SPSS 2210.

PLSC 2430. Herbaceous Ornamental Plants. (3 Credits)

Identification, nomenclature, cultural requirements and landscape uses of herbaceous perennials, ornamental grasses, ferns, annuals and bulbs. Study of live plants is required. Taught with SAPL 430. Formerly offered as SPSS 2430.

Enrollment Requirements: Not open for credit to graduate students.

PLSC 2500E. Principles and Concepts of Agroecology. (3 Credits)

Application of ecological processes to modern agricultural production practices. Soil quality and maintenance of soil health and productivity. Ecological management of soils, crops, and livestock systems. Sustainability and enhancement of ecological services within agroecosystems. Taught with SAPL 500. Formerly offered as SPSS 2500E.

Enrollment Requirements: Recommended preparation: introductory course in plant biology, plant ecology, or environmental science.

Skill Codes: COMP Environmental Literacy

Topics of Inquiry: TO14: Environmental Literacy

PLSC 2520. Floral Art. (2 Credits)

The study of flower arrangement as an art form with emphasis on historical background, artistic principles, color harmony and care of perishable media. Individual expression is encouraged in the creation of floral composition. Taught with SAPL 520. Formerly offered as SPSS 2520.

Enrollment Requirements: May not be taken out of sequence after passing PLSC 3530 or HORT 3530.

PLSC 2560W. Written Communications in Horticulture. (1 Credit)

Writing as a component of communicating facts and opinions in the theory and practice of Horticulture. Assignments will reflect forms of writing commonly encountered by professional horticulturists, including descriptive brochures, articles for mass media, extension bulletins, and technical manuals. Formerly offered as SPSS 2560W.

Enrollment Requirements: ENGL 1007 or 1010 or 1011; open only to Plant Science, Horticulture, or Turfgrass Science majors.

Skill Codes: COMP Writing Competency

PLSC 3081. Summer Internship Experience. (0 Credits)

Provides opportunity for students to gain practical experience, knowledge, and professional skills in a work environment related to employment and careers in plant science or landscape architecture. Students work with instructor and internship supervisor to develop a learning contract and plan of work to ensure meaningful and educational tasks and experiences. Formerly offered as SPSS 3081.

May be repeated for credit

PLSC 3120E. Fungi, Fire, and Flood: Soil Microbes in a Changing World. (3 Credits)

An introduction to soil microorganisms through exploring how a diversity of fungi, bacteria, and other soil microbes behave in natural and extreme habitats across multiple scales of biological organization. We will relate microbial processes to global change drivers emphasizing responses to natural disasters and pollution, as well as discerning effects of microbial processes on mitigating threats and in addressing contemporary issues.

Enrollment Requirements: PLSC 2120

Skill Codes: COMP Environmental Literacy

Content Areas: CA3: Science & Technology

Topics of Inquiry: TO14: Environmental Literacy, TO16: Science & Empirical Inq

PLSC 3150. Advanced Turfgrass Management. (3 Credits)

Effects of environmental stresses and turfgrass management practices on growth, development, and physiology of turfgrasses. Implementation of proper management practices to promote optimal turfgrass health under stress conditions. Formerly offered as SPSS 3150.

Enrollment Requirements: PLSC 1100. Corequisite: PLSC 2120.

PLSC 3210. 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. Formerly offered as SPSS 3210.

Enrollment Requirements: BIOL 1107 or 1108 or 1110 or equivalent.

Content Areas: CA3LAB: Science & Tech Lab

Topics of Inquiry: TO16L: Science Emp Inq (Lab)

PLSC 3230. Biotechnology - Science, Application, Impact, Perception. (3 Credits)

Scientific, legal, and ethical aspects of Biotechnology application in agriculture, health medicine, forensics, and the environment. Designed for students with diverse departmental affiliations. Formerly offered as SPSS 3230.

Content Areas: CA3: Science & Technology

Topics of Inquiry: TO16: Science & Empirical Inq

PLSC 3245. 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, mutagenesis, genetic engineering and genome editing. Formerly offered as SPSS 3245.

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

PLSC 3255. 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. Formerly offered as SPSS 3255.

Enrollment Requirements: One of BIOL 1102, 1108, or 1110; or MCB 2410; or PLSC 3210, 3230, 3245 or 4210.

PLSC 3300. Principles of Turfgrass Irrigation Systems. (3 Credits)

Turfgrass irrigation systems, principles of hydraulics, irrigation components, design, installation and repair. Students will design irrigation systems for various turf areas. Field trips and fieldwork will be required. Taught with SAPL 230. Formerly offered as SPSS 3300.

Enrollment Requirements: Not open for credit to graduate students.

PLSC 3400. Professional Development for Turfgrass Industries. (2 Credits)

Topics include human resource information, communication skills, turfgrass pesticide laws and compliance, labor laws and compliance, bid specifications, resume writing, interviewing, golf course management structures, business ethics, and benefits of professional association membership. Guest lecturers include industry professionals and representatives. Taught with SAPL 240. Formerly offered as SPSS 3400.

Enrollment Requirements: Not open for credit to graduate students.

PLSC 3410. Woody Plants: Common Trees, Shrubs and Vines. (3 Credits)

Taxonomy, identification, ornamental characteristics, cultural requirements and landscape use of deciduous and evergreen woody plants most often utilized in landscapes of the northeastern United States and similar environs. Taught with SAPL 410. Formerly offered as SPSS 3410.

Enrollment Requirements: Recommended preparation: BIOL 1110.

PLSC 3420. Soil Chemistry Components. (4 Credits)

(Also offered as ENVE 3240.) 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. Lab exercises on a personal computer are an integral part of the course. Formerly offered as SPSS 3420.

Enrollment Requirements: CHEM 1124Q or 1127Q or 1137Q or 1147Q. Recommended preparation: PLSC 2120 and 2125.

PLSC 3440. Small Fruit Production. (3 Credits)

The commercial production of small fruits and grapes in the Northeast and Mid-Atlantic regions including varieties, fruit-growing systems and pruning, site requirements, harvesting methods, post-harvest requirements, marketing, pest complexes and IPM strategies of the major berry crops. Formerly offered as SPSS 3440.

Enrollment Requirements: Not open for credit to graduate students.

PLSC 3530. Advanced Floral Design. (2 Credits)

In depth study of post-harvest requirements for specialized floral crops. Exposure to novel floral materials with an emphasis on special events and wedding designs. Mass marketing, retail price structuring and mass-production concepts are covered. Taught jointly with SAPL 530. Formerly offered as SPSS 3530.

Enrollment Requirements: PLSC 2520; not open for credit to graduate students.

PLSC 3540. Garden Center Management. (3 Credits)

Fundamentals related to horticultural specialty businesses with particular emphasis on the retail and contracting areas. Specialty and mass merchandising firms are considered and compared. Taught with SAPL 540. Formerly offered as SPSS 3540.

Enrollment Requirements: Not open for credit to graduate students.

PLSC 3550. Urban Plant Systems Construction and Maintenance. (3 Credits)

Technical information on the effective construction and maintenance of planted systems. Structural and functional components of plant systems. Provision of ecosystem services. Overviews of a wide spectrum of planted systems including streetscaping, green roofs and green walls, rain gardens and bioretention, and phytoremediation systems. Techniques of soil modification. Plant selection. Establishment and maintenance of woody and herbaceous plants: planting, preservation, pruning, mulching, irrigation, and fertilization. Formerly offered as SPSS 3550.

Enrollment Requirements: Recommended preparation: BIOL 1110; PLSC 2430, 3410.

PLSC 3560. Indoor Plants and Interiorscaping. (3 Credits)

Taxonomy, identification, ornamental characteristics, cultural requirements and use of tropical plants. Principles of interiorscaping in the home, office, public buildings, and related locations. Taught with SAPL 560. Formerly offered as SPSS 3560.

PLSC 3610. Organic and Sustainable Vegetable Production. (4 Credits)

Fundamentals of soil management and crop plant husbandry as applied to vegetable production. Horticultural principles of crop growth. Focus is on sustainable and organic practices. Field laboratory will consist of required trips (some outside designated laboratory time) during the early part of the semester to organic and conventional farms. Taught with SAPL 620. Formerly offered as SPSS 3610.

Enrollment Requirements: Not open for credit to graduate students.

PLSC 3620. Soil Fertility. (3 Credits)

Factors governing nutrient uptake by plants, fate of nutrients applied to soils, principles and practices in the manufacture and use of fertilizers for crop production, laboratory and greenhouse studies of soil and plant response to applied nutrients. Formerly offered as SPSS 3620.

Enrollment Requirements: PLSC 2120.

PLSC 3640. Plant Propagation. (3 Credits)

Theory and practice in sexual and asexual propagation of horticultural plants, emphasizing the anatomical, physiological, and ecological principles involved. Laboratories provide practical experience with seeds, division, cuttings, budding, grafting, layering and tissue culture. Taught with SAPL 640. Formerly offered as SPSS 3640.

Enrollment Requirements: Not open for credit to graduate students.

PLSC 3660. Nursery Production. (3 Credits)

Principles of field and container production of nursery stock. Emphasis on production practices for woody nursery stock from propagule to sale. Taught with SAPL 660. Formerly offered as SPSS 3660.

PLSC 3670. Greenhouse Technology and Operations. (3 Credits)

Introduction to greenhouse crop management with emphasis on structures, environmental control systems, and management techniques used to control crop response. Formerly offered as SPSS 3670.

Enrollment Requirements: PLSC 1120.

PLSC 3675. Greenhouse Technology and Operations Laboratory. (1 Credit)

Greenhouse crop production techniques and methodologies. Follows a travel-course format, in which students participate in regularly scheduled field trips to commercial greenhouse operation in CT and neighboring states. Students will make observations on the mechanical systems, management considerations, and crop production practices employed by commercial businesses. Formerly offered as SPSS 3675.

Enrollment Requirements: PLSC 3670, which may be taken concurrently.

PLSC 3680. Advanced Cannabis Horticulture: Cannabis Production. (3 Credits)

Advanced concepts of Cannabis production, management, processing and product development that build upon SPSS 2130. Students will choose highly focused study of either indoor controlled environment production or outdoor cultivation of Cannabis for part of the course. Taught with SAPL 680. Formerly offered as SPSS 3680.

Enrollment Requirements: PLSC 2130 or instructor consent.

PLSC 3700. 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: PLSC 2120, PLSC 2125 or PLSC 1300; open to juniors or higher with instructor consent.

PLSC 3710. Soil Management, Soil Health, and Climate Change. (3 Credits)

Agricultural production systems topics, including 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 3770. Hydroponic Crop Production. (3 Credits)

Introduction of hydroponics and soilless cultivation with emphasis on its underlying technologies, commercial practices, and sciences. This course will offer a series of lectures and lab activities to facilitate student learning on the hydroponic crop production, including components of hydroponics, various types of hydroponics, and cultural practices to optimize crop production using hydroponics under a controlled environment.

Enrollment Requirements: Recommended preparation: PLSC 3620, PLSC 3640, PLSC 3660 or PLSC 3670 or SAPL 620, SAPL 640, SAPL 660, or SAPL 670.

PLSC 3810. Fundamentals of Plant Pathology. (3 Credits)

Causal agents, nature and dynamics of plant disease. Pathogen biology, factors influencing disease development, diagnosis of diseases, and principles of plant disease control with emphasis on major diseases of crop, horticultural and turfgrass systems. Formerly offered as SPSS 3810.

Enrollment Requirements: BIOL 1108 or 1110; open to juniors or higher.

PLSC 3820. Ecology and Control of Weeds. (3 Credits)

Weed origin and classification. Losses caused by weeds. Weed competition. Weed seed production, dormancy and germination. Cultural, mechanical, biological and chemical control methods. Weed identification. Formerly offered as SPSS 3820.

Enrollment Requirements: BIOL 1108 or 1110; or PLSC 1120.

PLSC 3830. Horticultural Entomology. (3 Credits)

Identification and management of insects pests found in food crops, ornamental plants and turfgrass. Biology of key pests and their damage symptoms, monitoring and management tactics will be covered along with identification and use of beneficial insects employed in pest management. Formerly offered as SPSS 3830.

PLSC 3840. Integrated Pest Management. (3 Credits)

Principles of integrated pest management covering insect, disease, and weed problems in agronomic crops, vegetables, fruits, turfgrass, ornamentals, and greenhouse production. Environmental impacts and pest control strategies will be covered. Taught with SAPL 840. Formerly offered as SPSS 3840.

Enrollment Requirements: Not open for credit to graduate students.

PLSC 3990. Field Study Internship. (1-6 Credits)

Students will work with professionals in an area of research or management. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory.) This course may be repeated provided that the sum total of credits earned does not exceed six credits. Formerly offered as SPSS 3990.

Enrollment Requirements: Open only to juniors and seniors who have demonstrated professional potential as identified by their advisor. May be repeated for a total of 6 credits

PLSC 3995. Special Topics. (1-6 Credits)

Topics and credits to be published prior to the registration period preceding the semester offerings. Formerly offered as SPSS 3995. May be repeated for credit

PLSC 3996. Undergraduate Research in Plant Science. (1-6 Credits)

Individualized research conducted under the supervision of a faculty instructor. The student is required to submit a report on research findings at the end of the semester. Consent of instructor and department head required. Formerly offered as SPSS 3996.

Enrollment Requirements: Instructor and department head consent. May be repeated for credit

PLSC 3998. 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 with a change in content. Formerly offered as SPSS 3998.

May be repeated for credit

PLSC 3999. Independent Study. (1-6 Credits)

Students are expected to submit written reports. Formerly offered as SPSS 3999.

May be repeated for credit

PLSC 4210. Plant Physiology: How Plants Work. (3 Credits)

Principles of plant physiology and gene expression from the cell to the whole plant level. Emphasis on plant cell structure, water movement, transport systems, photosynthesis, respiration, phytohormone signals and responses to environmental stresses. Formerly offered as SPSS 4210.

Enrollment Requirements: BIOL 1108 or 1110; CHEM 1122 or 1124Q or 1127Q or 1137Q or 1147Q; open to juniors or higher.