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## Crop Science (CRPSCI)

### **CRPSCI 001 Introduction to Plant Science (3)**

*Class Hours: 36 Lecture | 54 Laboratory*

*Transfers to: UC/CSU*

*C-ID: AG-PS 106L*

CRPSCI 001 is designed to provide students with a working knowledge of plant science including structure, growth process, propagation, physiology, growth media, biological competitors, and post-harvest factors of food, fiber and ornamental plants. Techniques of research, exploration of plant growth and identification of economical crops will be included.

### **CRPSCI 002 Plant Science Theory (3)**

*Class Hours: 54 Lecture*

*Transfers to: UC/CSU*

CRPSCI 002 is designed to provide students with a working knowledge of plant science including structure, growth process, propagation, physiology, growth media, biological competitors, and post-harvest factors of food, fiber and ornamental plants. Techniques of research, exploration of plant growth and identification of economical crops will be included.

### **CRPSCI 006 Introduction to Precision Agriculture (3)**

*Class Hours: 36 Lecture | 54 Laboratory*

*Transfers to: CSU*

CRPSCI 006 provides students with an introduction to precision agriculture. Topics include Global Positioning System (GPS), yield monitoring, site-specific soil sampling, Geographic Information Systems (GIS), remote sensing and variable rate technology. Students will gain hands-on experience using industry-grade GIS software and GPS hardware.

### **CRPSCI 007 Advanced Precision Agriculture (3)**

*Class Hours: 36 Lecture | 54 Laboratory*

*Transfers to: CSU*

CRPSCI 007 provides an in depth study into precision agriculture, including: vehicle navigation and guidance, remote sensing, yield monitoring, site-specific crop management, and variable rate technology. Additional topics include: methods of applying agrichemicals, sprayer calibration, site-specific fertilizer management, soil and tissue testing, integrated pest management and soil amendments. Subjects such as electrical, hydraulics and instrumentation will be covered as they apply to the precision agriculture industry.

### **CRPSCI 008 Applications of Geospatial Technology (3)**

*Class Hours: 36 Lecture | 54 Laboratory*

*Transfers to: CSU*

CRPSCI 008 surveys the uses and applications of geospatial technologies in agriculture and related fields. The course focuses on GPS (Global Positioning System) and GIS (Geographic Information Systems) for data collection, navigation, recordkeeping, remote imagery, and analysis. Students gain hands-on experience using industry grade GIS software and GPS hardware.

### **CRPSCI 017 Control and Sensor Systems in Ag (3)**

*Class Hours: 36 Lecture | 54 Laboratory*

*Transfers to: CSU*

CRPSCI 017 provides students with concepts of sensors and control systems. Fundamentals of GPS, GIS, telemetry, hydraulics, pneumatics, electronics and programming are covered as underlying technologies. The second portion of the course applies these technologies to autoguidance, variable rate, autonomous UAS, field sensors, fertigation and irrigation control systems, and livestock sensors. Hands-on activities include installation and use of these sensor and control systems.

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**CRPSCI 018 Precision Ag Software (3)**

*Class Hours: 36 Lecture | 54 Laboratory*

*Transfers to: CSU*

CRPSCI 018 provides students with skills in the use of GIS (Geographic Information Systems) and FMIS (Farm Management Information Systems) software. Specific competencies include import/export, use of analytical tools, prescriptions, and creation of interpretative maps. Creation of an interactive web-based map and use of scripting or programming language such as Python are also covered.

**CRPSCI 019 California Water (3)**

*Class Hours: 54 Lecture*

*Transfers to: CSU*

CRPSCI 019 is an interdisciplinary examination of California's water use and management with an historical emphasis on the politics and conflict arising from water scarcity. Instruction in the fundamentals of irrigation application and measurement systems will be provided. Included will be a study of the basic irrigation systems: flood, sprinkler, micro, sub-irrigation and their variations. California's water systems and water quality problems will be reviewed.

**CRPSCI 021 Orchard Production (3)**

*Class Hours: 36 Lecture | 54 Laboratory*

*Transfers to: CSU*

CRPSCI 021 will cover the production practices and systems for developing and maintaining a productive orchard. Topics, as applied to all permanent crops, will include the following: soil, water and salinity management; planning and evaluation of an orchard; genetic considerations; growth, development, and physiology; nutrient and water interactions; and pest management. The UC production manuals will be used a textbook for course content. Lab exercises will focus on application of technology in orchard production practices.

**CRPSCI 023 Row Crop Production (3)**

*Class Hours: 36 Lecture | 54 Laboratory*

*Transfers to: CSU*

CRPSCI 023 covers the production systems and practices for a row crop production field. Varietal differences, transplant operations, cultural practices, irrigation, physiological and pest problems, harvesting and handling, and production costs will be covered. Content will be based on University of California publications. Lab activities provides hands-on experience with geospatial, sensor, and control technologies as applied to row crop production.

**CRPSCI 032 Weeds and Poisonous Plants (3)**

*Class Hours: 36 Lecture | 54 Laboratory*

*Transfers to: CSU*

CRPSCI 032 is the study of the classification, identification, and life cycle of common and poisonous weeds in California production areas and grasslands and their effects on animals and humans including management practices such as prevention, and mechanical, biological, and chemical control methods. Weeds establishment and chemical resistance will also be discussed. Laboratory required.

**CRPSCI 036 Fertilizers and Soil Amendments (3)**

*Class Hours: 36 Lecture | 54 Laboratory*

*Transfers to: UC/CSU*

CRPSCI 036 is the study of the composition, value, selection, and use of fertilizer materials and soil amendments within the context of soil, plant, and fertilizer relationships. Application practices currently being used in California will be discussed.

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**CRPSCI 044 Economic Entomology (3)**

*Class Hours: 36 Lecture | 54 Laboratory*

*Transfers to: CSU*

CRPSCI 044 is the study of the insects and mites of economic importance to agriculture including morphology, taxonomy, identification, life cycles, hosts, habitat relationships, and control methods. Collection and labeling of specimens will be required. Laboratory required.

**CRPSCI 045 Ca Pest Control Laws & Regulations (2)**

*Class Hours: 36 Lecture*

*Transfers to: CSU*

CRPSCI 045 covers the laws and regulations concerning pest control in California. This course is intended to cover the material needed to pass the laws and regulations section for the California Department of Pesticide Regulations Pest Control Adviser examination.

**CRPSCI 046 Integrated Pest Management (3)**

*Class Hours: 36 Lecture | 54 Laboratory*

*Transfers to: CSU*

CRPSCI 046 studies the origin, history, and management measures for insect, plant pathogen, weed, and other pests of field crops, pest biology and life cycles are studied to demonstrate the use of various Integrated Pest Management (IPM) technologies for economic crop production. Pesticide regulations, application, formulations, and materials for specific uses are covered.

**CRPSCI 049 Directed Study (1 - 2)**

*Class Hours: 108 Laboratory*

*Transfers to: CSU*

CRPSCI 049 is designed for students who wish to undertake special projects related to a particular field. Students, under instructor guidance and acknowledgement, may pursue individual exploration after completing or while currently enrolled in at least one course in the department of directed study.

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