

Course Catalog - Spring 2010

Plant Pathology

199 ***Undergraduate Open Seminar*** credit: 1 to 5 hours.

Experimental course on a special topic in plant pathology. Topic may not be repeated except in accordance with the Code. May be repeated in the same or subsequent terms. No more than 12 hours may be counted toward graduation.

200 ***Plants, Pathogens, and People*** credit: 3 hours.

Plant diseases and their impact on food supplies and human history are studied in lectures, demonstrations and discussions. Issues of food production and safety, pesticide use and human health, and the environment are considered. Includes the biology of pathogens that cause plant disease. Designed for non-science and science majors. Prerequisite: RHET 105 or equivalent.

This course satisfies the General Education Criteria for a Advanced Composition, and Life Sciences course.

204 ***Introductory Plant Pathology*** credit: 3 hours.

Concepts relating to causal agents of representative plant diseases, symptoms and diagnosis, modes of infection and spread, effects of environment on disease development, and methods of control.

This course satisfies the General Education Criteria for a Life Sciences course.

395 ***Undergrad Research or Thesis*** credit: 1 to 4 hours.

Individual research, special problems, thesis, development and/or design work under the supervision of an appropriate member of the faculty. May be repeated to a maximum of 12 hours.

401 ***Plant Pathogenic Fungi*** credit: 4 hours.

Principles of the biology, ecology and pathogenesis of fungi that cause plant diseases; morphology, classification, and history of these pathogens. The course includes both lecture and laboratory components. Prerequisite: One year of biology or plant biology; and plant and animal genetics; and an introductory plant pathology course; or consent of instructor.

402 ***Phytoparasitic Nematodes*** credit: 2 hours.

Study of plant-pathogenic nematodes with emphasis on economically important groups; nematode morphology, identification, classification, development biology, ecology, and host-parasite relationships; interaction with fungi, bacteria and viruses in plant disease development, experimental and diagnostic techniques; and symptomology and control. Prerequisite: An introductory course in plant pathology and an introductory course in zoology, or consent of instructor.

404 ***Plant Virology*** credit: 2 hours.

Current knowledge of viruses and the diseases they cause in plants studied in lectures, discussions and laboratories. Topics include virus structure, replication, expression, taxonomy and transmission and viral disease detection, diagnosis, epidemiology and management. Prerequisite: An introductory course in plant pathology and an introductory course in genetics, or consent of instructor.

405 **Plant Disease Diagnosis** credit: 2 hours.

Field and laboratory techniques in plant disease diagnosis and appraisal; identification of diseases of small grains, turf, corn, soybeans, forage crops, vegetables, fruit, forest and shade trees, and ornamentals, both on field trips and in laboratory exercises. Prerequisite: PLPA 204 or equivalent.

406 **Phytobacteriology** credit: 2 hours.

Provides up-to-date coverage of prokaryotes that cause plant diseases. Lectures, discussions, and laboratories cover taxonomy, molecular biology, etiology, detection and identification, epidemiology and management of major plant pathogenic prokaryotes. Prerequisite: An introductory course in Plant Pathology and Microbiology, or consent of instructor.

407 **Diseases of Field Crops** credit: 3 hours.

Studies the symptoms of major field crop diseases, life histories of causal organisms, and methods of control. Lecture and laboratory. Same as CPSC 407. Prerequisite: PLPA 204 or PLPA 401.

409 **Diseases of Ornamentals & Turf** credit: 3 hours.

Symptoms, diagnosis, causal agents, epidemiology and control of diseases of ornamental and turfgrass plants are studied in lectures, laboratories and discussions. Prerequisite: PLPA 204.

504 **Plant Nematology** credit: 4 hours.

Comprehensive study of plant-feeding nematodes with emphasis on economically important groups; nematode morphology, identification, classification, developmental biology, ecology, and host-parasite relationships; interaction with fungi, bacteria, and viruses in plant disease development; experimental and diagnostic techniques; symptomatology and control. Offered in alternate years. Prerequisite: PLPA 204 or PLPA 401; an introductory course in animal biology; or consent of instructor.

505 **Genetics of Host-Pathogen Int** credit: 4 hours.

The genetics and expression of resistance in plants to fungi, bacteria, viruses, nematodes, and other pathogens; variation and genetic systems in pathogens with particular emphasis on pathogenicity; complementary genetic systems; and theory and practice of breeding disease-resistant plants. Lecture and discussion. Offered in alternate years. Prerequisite: PLPA 204 or PLPA 401; and CPSC 453 or equivalent.

509 **Mol Bio of Microbe-Plant Inter** credit: 3 hours.

Detailed analysis of the microbe-plant interaction at the molecular level. Covers commensal, symbiotic, and pathogenic interactions from viewpoint of both plant and microbe. Emphasizes microbial and plant genes involved in the interactions, their organization, regulation of expression and the nature and function of the encoded gene products. Same as MCB 511. Prerequisite: PLPA 403, or equivalent; MCB 421, or MCB 430, or equivalent; and MCB 350 or equivalent.

599 **Thesis Research** credit: 0 to 16 hours.

Individual study and basic and/or applied research related to plant disease; required of all students working toward the Master of Science or Doctor of Philosophy in Plant Pathology. Approved for S/U grading only.