PLANT PATHOLOGY (PLPT)

PLPT 800 Intermediate Plant Pathology
Crosslisted with: PLPT 400
Prerequisites: PLPT 210 or BIOS 312; concurrent enrollment in PLPT 400L
Description: Exploring the biology of plant pathogens, pathogen-host plant interactions, and environmental influences on plant diseases. Examining cultural, chemical, and biological strategies, along with host resistance, for plant disease management. Builds on topics covered in PLPT 210, with additional emphasis on the strategies employed by the four major groups of plant pathogens, plant responses to disease-causing organisms, and approaches to disease management.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Grading Option: Grade Pass/No Pass Option
Offered: SPRING
Prerequisite for: PLPT 801, AGRO 801, HORT 801

PLPT 800L Intermediate Plant Pathology Lab
Crosslisted with: PLPT 400L
Prerequisites: Concurrent enrollment in PLPT 400/800
Notes: BIOS 314 recommended. At present, PLPT 400/800 may be taken without PLPT 400L/800L.
Description: Companion lab for PLPT 400/800
Credit Hours: 1
Max credits per semester: 1
Max credits per degree: 1
Grading Option: Grade Pass/No Pass Option
Offered: SPRING
Course and Laboratory Fee: $60

PLPT 801 Biology of Plant Pathogens
Crosslisted with: AGRO 801, HORT 801
Prerequisites: Undergraduate or graduate level course in Molecular or Cell Biology. Previous exposure to plant pathology, such as PLPT 369 or equivalent is recommended.
Description: Molecular and cellular approach to the study of plant pathological principles.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Grading Option: Grade Pass/No Pass Option
Prerequisite for: PLPT 866; PLPT 965, AGRO 965, HORT 965

PLPT 802 Ecology and Management of Plant Pathogens
Crosslisted with: AGRO 802, HORT 802
Prerequisites: PLPT 369 or equivalent; an introduction to biochemistry course
Description: Principles of plant disease epidemiology and disease control through cultural, biological, chemical and host plant resistance strategies.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Grading Option: Grade Pass/No Pass Option
Prerequisite for: PLPT 866; PLPT 965, AGRO 965, HORT 965

PLPT 812 Bacterial Lifestyles
Crosslisted with: PLPT 412
Prerequisites: BIOS 312 or BIOS 201 or PLAS 215
Description: Covers principles of bacteriology focusing on the strategies bacteria use to thrive and survive in many different environments including non-living surfaces, and other living organisms.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Grading Option: Graded
Offered: SPRING

PLPT 813 Biological Control of Pests
Crosslisted with: ENTO 813
Prerequisites: 12 hrs biological sciences and/or agricultural sciences
Description: Principles and practices of using natural enemies and antagonists to manage the abundance of pests and reduce economic losses.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Grading Option: Grade Pass/No Pass Option

PLPT 814 Turfgrass Disease Management
Crosslisted with: AGRO 814, HORT 814, PLPT 414, PLAS 414, TLMT 814
Prerequisites: BIOS/PLPT 369 or one semester of introductory plant pathology.
Description: Pathogens, epidemiology, and control of diseases specific to turfgrass.
Credit Hours: 1
Max credits per semester: 1
Max credits per degree: 1
Grading Option: Grade Pass/No Pass Option

PLPT 815 Corn Diseases
Crosslisted with: PLPT 415
Prerequisites: PLPT 210 or PLPT 400 or equivalent
Notes: Taught online only. This is an 8-week mini-course.
Description: Introduction to the important diseases affecting corn (maize) in Nebraska and other areas of the United States. Pathogen biology, favorable conditions, disease diagnosis based on symptomatology and management strategies are emphasized
Credit Hours: 1
Max credits per semester: 1
Max credits per degree: 1
Grading Option: Graded

PLPT 817 Plant Pathology Principles and Application
Crosslisted with: AGRO 817, HORT 817
Prerequisites: 12 hours of prior coursework in the plant sciences
Description: Introduction to the biology of plant pathogenic organisms; pathogen-plant interactions; environmental influences; cultural, resistance, and chemical strategies for plant disease management.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Grading Option: Grade Pass/No Pass Option

PLPT 818 Microbial Genetics & Genomics
Crosslisted with: PLPT 418, MBIO 418
Prerequisites: BIOS 201 or PLAS 215.
Notes: BIOS 312 is recommended.
Description: Inheritance, exchange, and regulation of genes in prokaryotic microorganisms: gene structure and function; gene transfer and the elements (plasmids, phages, and transposons) involved; DNA mutations, repair, and genetic analysis; genome sequencing, microbial genome databases, and global gene expression analysis.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Grading Option: Graded
Prerequisite for: PLPT 801, AGRO 801, HORT 801

PLPT 830 Introduction to Plant Diagnostics
Crosslisted with: AGRO 830, PLAS 430, HORT 830
Prerequisites: PLAS 131 or LIFE 121 and ENTO 105 or ENTO 115 and PLPT 210
Description: Presents a broad view of the various challenges to plant health including abiotic and biotic disease, insects, and weeds. Learn a systematic approach to the diagnosis of plant disorders through hands-on exercises and case studies with application to agronomic and specialty crops and gain experience in presenting their findings to various audiences.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Grading Option: Grade Pass/No Pass Option

PLPT 866 Phytopathogenic Nematodes
Prerequisites: PLPT 801 or 802; and permission
Description: Principles of nematode-induced disease of plants.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Grading Option: Graded

PLPT 867 Plant Associated Microbes
Prerequisites: A course in general microbiology, bacteriology, or mycology. A course in general plant pathology is highly recommended.
Description: Biology, ecology, and taxonomy of bacteria and fungi pathogenic or beneficial to plants. Microorganism isolation from plants and soil. Identification and plant inoculation.
Credit Hours: 4
Max credits per semester: 4
Max credits per degree: 4
Grading Option: Grade Pass/No Pass Option

PLPT 891 Plant Disease Field Tour
Description: Diseases in Nebraska agricultural, urban, and wildland plant ecosystems; field diagnosis and management. One-week tours will be held in the summer prior to semester of enrollment.
Credit Hours: 1-2
Min credits per semester: 1
Max credits per semester: 2
Max credits per degree: 2
Grading Option: Grade Pass/No Pass Option

PLPT 892 Special Topics in Plant Pathology
Prerequisites: 12 hrs of microbiology, plant science or related fields
Notes: Topics vary.
Credit Hours: 1-4
Min credits per semester: 1
Max credits per semester: 4
Max credits per degree: 12
Grading Option: Graded

PLPT 899 Masters Thesis
Prerequisites: Admission to masters degree program and permission of major advisor.
Description: Research and writing towards the master's thesis
Credit Hours: 1-10
Min credits per semester: 1
Max credits per semester: 10
Max credits per degree: 99
Grading Option: Pass No-Pass

PLPT 963 Genetics of Host-Parasite Interaction
Crosslisted with: AGRO 963, HORT 963
Prerequisites: BIOS 820; and permission
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Grading Option: Graded

PLPT 965 Plant Virology
Crosslisted with: AGRO 965, HORT 965
Prerequisites: PLPT 801 or 802; and permission.
Notes: PLPT 865 is offered odd-numbered calendar years.
Description: Virus molecular biology; virosphere; virus-vector relationships; plant resistance to virus infection economic impact and control of plant diseases by viruses.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Grading Option: Grade Pass/No Pass Option
Offered: SPRING

PLPT 968 Seminar in Plant Pathology
Crosslisted with: AGRO 968, HORT 968
Prerequisites: Permission.
Credit Hours: 1
Max credits per semester: 1
Max credits per degree: 1
Grading Option: Grade Pass/No Pass Option
Offered: SPRING

PLPT 999 Doctoral Dissertation
Prerequisites: Admission to doctoral degree program and permission of supervisory committee chair
Description: Research and writing towards the PhD dissertation
Credit Hours: 1-24
Min credits per semester: 1
Max credits per semester: 24
Max credits per degree: 99
Grading Option: Pass No-Pass