

Plant Pathology - PLPA

Courses

PLPA 2000 PESTS, PATHOGENS, PARASITES, AND PEOPLE (3) LEC. 3. Past and present problems of pests and disease involving humans and the food chain.

PLPA 2980 INTRODUCTION TO UNDERGRADUATE RESEARCH (1-4) IND/RES. Departmental approval. Directed research in the area of specialty within the department. Course may be repeated for a maximum of 4 credit hours.

PLPA 3000 GENERAL PLANT PATHOLOGY (4) LEC. 3. LAB. 2. Pr. BIOL 1030 or BIOL 1037. Survey of plant diseases common in Alabama, including symptom recognition, pathogen biology and management of plant diseases. Course credit will not be given for both PLPA 3000 and PLPA 3003/3004.

PLPA 4960 SPECIAL PROBLEMS IN PLANT PATHOLOGY (1-3) IND. Departmental approval. Supervised work on a project in plant pathology. Areas of study are: A. Mycology; B. Nematology; C. Virology; D. Bacteriology; E. Extension and Clinic Experience; F. Physiological and Molecular Approaches. Course may be repeated for a maximum of 3 credit hours.

PLPA 4980 UNDERGRADUATE RESEARCH (1-4) LAB. 2-8. Departmental approval. Directed research in the area of specialty within the department. Course may be repeated for a maximum of 4 credit hours.

PLPA 5050 PLANT DISEASE DIAGNOSIS (3) LEC. 1. LAB. 3. Pr. PLPA 3000 or PLPA 3003. Approaches, techniques, and practical experience in diagnosis of plant diseases. Credit will not be given for both PLPA 5050 and PLPA 6050. Summer.

PLPA 5200 MYCOLOGY (2) LEC. 1. LAB. 2. Pr. BIOL 1030 or BIOL 1037. Biology of fungi with emphasis on taxonomy, morphology, physiology, genetics, reproduction, and how fungi interact with their ecosystems with an emphasis on plant pathogens. Credit will only be given to one of the following: PLPA 5200 or 6200.

PLPA 5250 MEDICAL AND VETERINARY MYCOLOGY (2) LEC. 2. A systematic survey of fungi and the diseases they cause on humans and animals.

PLPA 5300 PLANT-BACTERIAL INTERACTIONS (2) LEC. 1. LAB. 2. Pr. BIOL 1030 or BIOL 1037. Comprehensive review of plant-bacterial interactions, including colonization, pathogenesis, symbiotic and associative nitrogen fixation, and transformation. Credit will only be given to one of the following: PLPA 5300 or PLPA 6300.

PLPA 5330 INTEGRATED PEST MANAGEMENT (3) LEC. 3. Aspects of pest management as a broad-based approach that integrates practices for economic control of pests. May count either ENTM/HORT/PLPA 5330/6330.

PLPA 5400 PLANT VIROLOGY (2) LEC. 1. LAB. 2. Pr. BIOL 1030 or BIOL 1037. Plant viruses are one of the major pathogens causing problems in plants. This course will cover the fundamentals of plant viruses such as infectious cycle, genome, structure, and evolution. The course will also introduce applied biotechnology based on virus-plant interaction. Credit will only be given to one of the following: PLPA 5400 or PLPA 6400.

PLPA 5500 PLANT NEMATOLOGY (2) LEC. 1. LAB. 2. Pr. BIOL 1030 or BIOL 1037. Presentation of nematodes in relation to plant diseases, identification of plant nematodes; nature of pathogenicity; principles and practices of management; recent advances in phytonematology. Credit will only be given to one of the following: PLPA 5500 or PLPA 6500.

PLPA 5600 MOLECULAR PLANT-MICROBE INTERACTIONS (3) LEC. 3. Pr. BIOL 3000. Comprehensive coverage of present advances in plant defense-related metabolic pathways: how to recognize pathogen infections, and activate/potentiate disease resistances. Introduces biochemical, molecular and cellular mechanisms by which plants defend/assimilate themselves towards diverse a/biotic stress stimuli. Credit will only be given for one of the following courses: PLPA 5600 or PLPA 6600.

PLPA 5700 VECTOR TRANSMISSION OF PLANT PATHOGENS (3) LEC. 3. Pr. BIOL 1030 or BIOL 1037. This course is designed to give students an understanding of vectors of plant pathogens. The use of case studies during this course is designed to show real world examples of pathogens which utilize insects as an important part of their lifecycle. May only count one of PLPA/ENTM 5700/6700.

PLPA 5800 OMICS IN AGRICULTURE (3) LEC. 2. LAB. 2. Pr. BIOL 1030 or BIOL 3000 or AGRI 3000. This course will introduce students to the recent advances in high-throughput technologies such as genomics, transcriptomics, metagenomics, metabolomics, phenomics, modeling, and digital agriculture and how these technologies can be applied to tackling new and old problems in agriculture and human health. Students will be able to gain hands-on experience in analyzing and interpreting datasets obtained using these technologies.

PLPA 5820 PRINCIPLES AND TOOLS FOR REPRODUCIBLE SCIENCE IN AGRICULTURE (2) LEC. 2. Pr. STAT 2510. Reproducibility is fundamental to science. This course will cover basic concepts in scientific reproducibility, accessibility, and organization as it relates to handling large datasets and publishing data workflows.

PLPA 5920 INTERNSHIP (3) IND. 3. SU. Practical professional experience under the supervision of internship faculty and a representative of a state, federal, or private agency.

PLPA 6050 PLANT DISEASE DIAGNOSIS (3) LEC. 1. LAB. 3. Graduate level standing in PLPA, ENTM, AGRO, HORT, AGEC or Department approval. Experience with plant disease diagnosis procedures and the diagnosis of many common plant diseases. Summer.

PLPA 6200 MYCOLOGY (2) LEC. 1. LAB. 2. Biology of fungi with emphasis on taxonomy, morphology, physiology, genetics, reproduction, and how fungi interact with their ecosystems with an emphasis on plant pathogens. Graduate level standing or Departmental approval. Credit will only be given to one of the following: PLPA 5200 or PLPA 6200.

PLPA 6250 MEDICAL AND VETERINARY MYCOLOGY (2) LEC. 2. Pr. BIOL 3200. or prior approval of the instructor. A systematic survey of fungi and the diseases they cause on humans and animals.

PLPA 6300 PLANT-BACTERIAL INTERACTIONS (2) LEC. 1. LAB. 2. Comprehensive review of plant-bacterial interactions, including colonization, pathogenesis, symbiotic and associative nitrogen fixation, and transformation. Credit will only be given to one of the following: PLPA 5300 or PLPA 6300.

PLPA 6330 INTEGRATED PEST MANAGEMENT (3) LEC. 3. Aspects of pest management as a broad-based approach that integrates practices for economic control of pests. May count either ENTM/HORT/PLPA 5330/6330.

PLPA 6400 PLANT VIROLOGY (2) LEC. 1. LAB. 2. Plant viruses are one of the major pathogens causing problems in plants. This course will cover the fundamentals of plant viruses such as infectious cycle, genome, structure, and evolution. The course will also introduce applied biotechnology based on virus-plant interaction. Credit will only be given to one of the following: PLPA 5400 or PLPA 6400.

PLPA 6500 PLANT NEMATODOLOGY (2) LEC. 1. LAB. 2. Presentation of nematodes in relation to plant diseases, identification of plant nematodes; nature of pathogenicity; principles and practices of management; recent advances in phytonematology. Credit will only be given to one of the following: PLPA 5500 or PLPA 6500.

PLPA 6600 MOLECULAR PLANT-MICROBE INTERACTIONS (3) LEC. 3. Comprehensive coverage of present advances in plant defense-related metabolic pathways: how to recognize pathogen infections, and activate/potentiate disease resistances, biochemical, molecular and cellular mechanism by which plants defend/assimilate themselves towards diverse a/biotic stress stimuli. Credit will only be given for one of the following courses: PLPA 5600 or PLPA 6600.

PLPA 6700 VECTOR TRANSMISSION OF PLANT PATHOGENS (3) LEC. 3. This course is designed to give students an understanding of vectors of plant pathogens. The use of case studies during this course is designed to show real world examples of pathogens which utilize insects as an important part of their lifecycle. May only count one of PLPA/ENTM 5700/6700.

PLPA 6800 OMICS IN AGRICULTURE (3) LEC. 2. LAB. 2. This course will introduce students to the recent advances in high-throughput technologies such as genomics, transcriptomics, metagenomics, metabolomics, phenomics, modeling, and digital agriculture and how these technologies can be applied to tackling new and old problems in agriculture and human health. Students will be able to gain hands-on experience in analyzing and interpreting datasets obtained using these technologies.

PLPA 6820 PRINCIPLES AND TOOLS FOR REPRODUCIBLE SCIENCE IN AGRICULTURE (2) LEC. 2. Reproducibility is fundamental to science. This course will cover basic concepts in scientific reproducibility, accessibility, and organization as it relates to handling large datasets and publishing data workflows.

PLPA 6920 INTERNSHIP (3) IND. 3. SU. Departmental approval. Practical professional experience under the supervision of internship faculty and a representative of a state, federal, or private agency.

PLPA 7080 FIELD SURVEY OF PLANT PATHOLOGY (3) LEC. 1. LAB. 6. Practical aspects of plant diseases under field conditions, on-site visits via field trips; discussion of experimental design for field research. Summer.

PLPA 7860 PLANT DISEASE EPIDEMIOLOGY (2) LEC. 2. Pr. PLPA 3000. Aspects of plant disease epidemiology including disease assessment and temporal progress, pathogen spread, and yield loss determination.

PLPA 7861 PLANT DISEASE EPIDEMIOLOGY LABORATORY (2) LAB. 4. Coreq. PLPA 7860. Quantitative aspects of plant disease epidemiology including spatial and temporal modeling, and disease system simulation.

PLPA 7880 PLANT MICROBIAL ECOLOGY (3) LEC. 3. LAB. 0. Concepts in ecology of plant-associated microbes and their interactions with plants using molecular approaches.

PLPA 7881 PLANT MICROBIAL ECOLOGY LABORATORY (2) LAB. 4. This course will involve hands-on experience with genomic, metagenomic, transcriptomic datasets. Graduate standing in the College of Agriculture/COSAM.

PLPA 7900 DIRECTED STUDIES IN PLANT PATHOLOGY (1-5) LEC. SU. Discussion groups on specific topics, assigned reading on laboratory problems or field research.

PLPA 7910 TEACHING PRACTICUM (1) LAB. 2. SU. Graduate level standing in PLPA or ENTM or Departmental approval. The teaching practicum will address the practical and heretical issues of laboratory learning and facilitating the skills of pedagogy. Course may be repeated for a maximum of 3 credit hours.

PLPA 7930 JOURNAL REVIEW FOR ENTOMOLOGY AND PLANT PATHOLOGY (1) LEC. 1. Graduate level standing in PLPA, ENTM, AGRO, HORT, AGECE or Department approval. Discussion of recent scientific publications on basic aspects of research in entomology and plant pathology. Course may be repeated for a maximum of 2 credit hours.

PLPA 7950 SEMINAR IN PLANT PATHOLOGY (1) SEM. 1. SU. Departmental approval. Seminar presentations on current departmental research and current issues in plant pathology and related disciplines. Fall, Spring. Course may be repeated for a maximum of 2 credit hours.

PLPA 7960 SPECIAL PROBLEMS IN PLANT PATHOLOGY (1-4) LAB. 2-8. Departmental approval. Credit to be arranged. Specialized project or research on a specific topic in plant pathology to be conducted under faculty supervision. Course may be repeated for a maximum of 4 credit hours.

PLPA 7970 SPECIAL TOPICS IN PLANT PATHOLOGY (1-5) ST1. Advanced topics related to plant pathology. Course may be repeated for a maximum of 5 credit hours.

PLPA 7990 RESEARCH AND THESIS (1-10) MST. Departmental approval. Research and thesis on problems in plant pathology. Course may be repeated with change in topics.

PLPA 8880 MOLECULAR PLANT PATHOLOGY (3) LEC. 2. LAB. 2. Open discussion and article review on current topics and cutting-edge discoveries in the field of molecular plant pathology, covering the cellular mechanisms of plant interactions with, and immune responses against pathogens.

PLPA 8900 DIRECTED STUDIES IN PLANT PATHOLOGY (1-5) LEC. SU. Discussion groups on specific topics, assigned reading on laboratory problems or field research. Course may be repeated for a maximum of 5 credit hours.

PLPA 8910 TEACHING PRACTICUM (1) LAB. 2. SU. Departmental approval. Practical and theoretical issues of laboratory learning, and pedagogical facilitation. Required of all PhD students. Course may be repeated for a maximum of 3 credit hours.

PLPA 8930 JOURNAL REVIEW FOR ENTOMOLOGY AND PLANT PATHOLOGY (1) LEC. 1. Graduate level standing in PLPA, ENTM, AGRO, HORT, AGECE or Department approval. Discussion of recent scientific publications on basic aspects of research in entomology and plant pathology. Course may be repeated for a maximum of 3 credit hours.

PLPA 8950 SEMINAR (1) SEM. 1. SU. Departmental approval. Presentations and discussion of scientific literature or dissertation research findings. Required for all Ph.D. candidates. Fall, Spring. Course may be repeated for a maximum of 2 credit hours.

PLPA 8960 ADVANCED SPECIAL PROBLEMS IN PLANT PATHOLOGY (1-4) LAB. 2-8. Departmental approval. Credit to be arranged. Specialized project or research on a specific topic in plant pathology to be conducted under faculty supervision. Course may be repeated for a maximum of 4 credit hours.

PLPA 8990 RESEARCH AND DISSERTATION (1-10) DSR. Departmental approval. Research and dissertation on problems in plant pathology. Course may be repeated with change in topics.