

**UNIVERSITY OF PUERTO RICO
MAYAGÜEZ CAMPUS
COLLEGE OF AGRICULTURAL SCIENCES
DEPARTMENT OF CROP PROTECTION**

SYLLABUS and INSTRUCTOR INFORMATION SHEET FORM*

Course syllabus

General Information:

Course number: PROC 4006
Course title: Tropical Plant Pathology
Credits: Three credit hours. Two hours of lecture and one three-hour laboratory per week.

Course description:

The study of diseases of main tropical plants, including the host range, symptoms and signs, ethiology, cycles, epiphytology, distribution, economic importance and control.

Prerequisites:

BIOL 3435 or BIOL 3417

Text book, supplies and other resources:

Text:

Plant Pathology, 1997. George Agrios, 4^{ta}. Ed. Academic Press. N.Y., 635 pp.

Other references:

Illustrated Genera of Imperfect Fungi. 1987. H.L. Barnett y B.B. Hunter. MacMillan Publishing Co., N.Y.

Dictionary of Fungi. 1983. Ainsworth & Bisby. 7^{ma} ed. Commonwealth Mycological Institute. Kew, Surrey

Fungi on Plants and Plant Products in the United States. 1995. Farr, Bills, Chamuris and Rossman. APS Press. Mn.

Journals:

Phytopathology - Published monthly by the American Phytopathological Society, APS Press, Mn.

Plant Disease - Published monthly by the American Phytopathological Society, APS Press, Mn.
Mycologia - Published monthly by the Mycological Society of America, The New York Botanical Garden, Bronx, N.Y.
The Journal of Agriculture of the University of Puerto Rico. Published by the A.E.S. of the Univ. of P.R., Río Piedras, Puerto Rico.

Purpose:

This course is preparatory work in completing a bachelor degree in the Department of Crop Protection or related discipline of the College of Agricultural Sciences.

Course goals:

After completing the course the students should be able to accomplish the following objectives:

General objectives:

Define basic concepts of plant pathology.
Explain the diverse mechanisms involved in plant disease development.
Integrate concepts learned during the semester in the diagnostic and control of plant diseases.

Specific objectives:

Define basic concepts of plant pathology.
Know the history of plant pathology.
Describe the mechanisms involved in plant disease development.
Explain the effects of environmental factors on disease development.
Compare the mechanisms of variability in plant pathogens.
Identify the different groups of plant pathogenic organisms.
Diagnose most common plant diseases of the tropics.
Apply the most common methods and strategies used in the control of plant pathogens.
Acknowledge the importance of biotechnology as a tool to study plant-pathogen interactions.

Requirements:

All students are expected to: Complete all lessons, do all assigned readings and related work, come to class all the time and on time, pass all test to receive credit for the course.

Laboratory and field work:

Labs are considered a major part of the class, and all students are expected to participate. The course requires a 3 hours lab per week in which students will learn different methods to handle appropriately plant pathogens. Students will learn methodology currently used in the identification of plant pathogens through the examination and preparation of microscope slides of the different fungal taxonomic groups and of bacterial Gram Reaction. In addition the students will learn culture media preparation, aseptic

techniques to work with plant pathogens, ELISA for virus detection and current methods used in nematology.

Radios, tape recorders, cell phones and other audio or video equipment are not permitted in the lab or classroom at any time. Smoking is not permitted in any area that those designated for smoking.

Department/campus policies:

Class attendance: Class attendance is compulsory. The University of Puerto Rico, Mayagüez Campus, reserves the right to deal at any time with individual cases of non-attendance. Professors are expected to record the absences of their students. Frequent absences affect final grade, and may even result in total loss of credits. Arranging to make up work missed because of legitimate class absence is the responsibility of the student. (Bulletin of Information Undergraduate Studies, pp. 39, 1995-96).

Absence from examinations: students are required to attend all examinations. If a student is absent from an examination for a justifiable reason acceptable to the professor, he or she will be given a special examination. Otherwise, he or she will receive a grade of 0 or F in the examination missed. (Bulletin of Information Undergraduate Studies, pp. 39, 1995-96).

Final Examinations: Final written examinations must be given in all courses unless, in the judgment of the Dean, the nature of the subject makes it impracticable. Final examinations scheduled by arrangements must be given during examination period prescribe in the Academic Calendar, including Saturdays. (Bulletin of Information Undergraduate Studies, pp. 39, 1995-96).

Partial withdrawals: A student may withdraw from individual courses at any time during the term, but before the deadline established in the university Academic Calendar. (Bulletin of Information Undergraduate Studies, pp. 37, 1995-96).

Complete withdrawals: A student may completely withdraw from the University of Puerto Rico, Mayagüez Campus, at any time up to the last day of classes. (Bulletin of Information Undergraduate Studies, pp. 37, 1995-96).

Disabilities: All the reasonable accommodations according to the American with Disability Act (ADA) Law will be considered with the Dean of Students and in accordance with the particular needs of the student.

Ethics: Any academic fraud is subject to the disciplinary sanctions described in article 14 and 16 of the revised General Student Bylaws of the University of Puerto Rico contained in certification 018-1997-98 of the Board of Trustees. The professor will follow the norms established in articles 1-5 of the Bylaws.

Campus resources:

General Library and Agricultural Computer Center are available to obtain professor's references materials and PCs will be available for student use. University's Student Center has tutorial programs for student who needs extra help.

General topics:

Introduction

Parasitism and disease development

How pathogens attack plants?

Effects of pathogens on plant physiological functions

How plants defend themselves against pathogens?

Genetics of plant disease

Plant disease epidemiology

Control of plant diseases

Environmental factors that caused diseases in plants

Plant diseases caused by fungi

Plant diseases caused by bacteria

Plant diseases caused by virus

Plant diseases caused by nematodes

Importance of biotechnology

