The University of Manitoba
Faculty of Agricultural and Food Sciences

COURSE TITLE

Department Plant Science **Course Number PLNT3570**

Academic Session Winter 2011 **Credit Hours 03**

Prerequisites and how they apply to this course

BIOL 2260 or the former 1.221 Biology of Fungi and Lichens or permission/consent from the professor.

Classroom Location Animal Science 108

Meeting Days and Class Hours Tuesday and Thursday 10.00 to 11.15

Lab/Seminar Location 343 Plant Science **Lab/Seminar/Hours** Wed 2.30 to 5.25 pm

Department Office location 222 Plant Science **Phone Number** 474-8221

Course Web Page (if applicable)

Instructor Information

Name & Title Dilantha Fernando, Professor

Office Location 205 Plant Science **Office Phone Number** 474-6072

Office Hours Monday to Friday during office hours (by appointment only)

Email Address D_Fernando@umanitoba.ca

Teaching Assistant(s) (if applicable) Ms. Besrat Demoz

TA Office Hours and Location Monday to Friday (Room 212 or 206) – by appointment only

Course Philosophy

Students' Learning Responsibilities

This course is an introduction to the science of plant pathology. Topics include causal agents of plant diseases, symptoms and diagnoses, modes of infection and spread, effects of the environment on disease development, and methods of disease control. The course will also cover plant's defense mechanisms, and conventional and novel control strategies practiced in plant disease management with some emphasis on molecular tools that are presently in use to understand these mechanisms and phenomena. Students have the responsibility in learning the fundamentals in plant pathology through the use of the required text book (Plant Pathology by G. Agrios – 5th Edition), lecture notes, hands on lab classes and through other print and electronic media including the internet. The students are particularly required to understand the concepts, and theories and some memorization (botanical names etc).

Why this course is useful?

This course will offer a sound background of concepts, and theories in plant pathology, its principles and practical applications to disease management. Undergraduate students who may want to further their studies in plant pathology, molecular plant pathology, breeding or mycology majors, or do post graduate studies leading to Masters and Doctoral degrees in plant pathology.

Who should take this course?

Students interested in plant pathology, and host-pathogen interactions should take this course. This course will offer a sound background for undergraduate students who may want to further their studies in plant pathology, molecular plant pathology, breeding or mycology majors, or do post graduate studies leading to Masters and Doctoral degrees in plant pathology.

How this course fits into the curriculum

The students will be introduced to economically important diseases in the prairies they may encounter on crop plants and horticultural trees, the causal organisms, reproductive structures, and how environment and the host could contribute to the success of a pathogen and its infection process. This fits extremely well with the curriculum as the course will go through these areas of learning through basic and molecular approaches giving the students the needed background for their Plant Biotechnology degree.

Course Description/Objectives

Undergraduate Calendar Description

This course is an introduction to the science of plant pathology. Topics include causal agents of plant diseases, symptoms and diagnoses, modes of infection and spread, effects of the environment on disease development, and methods of disease control. This course is a pre-requisite for more advanced courses in plant pathology.

Instructional Methods

Plant Pathology is taught through lectures by the instructor, guest lecturers and the text book. Video's and other instructional material such as live plant specimens will be used to demonstrate concepts, diseases and management practices.

Course Objectives

The main objective of the course is to help the students to understand the principles of host-pathogen interactions and how diseases occur in plants; the defense mechanisms plant have against plant pathogens and how other microorganisms and man have been able to manipulate the host-pathogen interaction to reduce and manage diseases.

Learning outcomes

Learning outcomes assist: i) students to identify the knowledge, skills, attitudes and personal attributes expected of them to successfully complete their program of studies; ii) faculty to develop learning goals and objectives in their courses and programs, in prioritizing and focusing the learning experiences, and in the selection of appropriate assessment tools and; iii) potential students and outside agencies to assess the quality of our academic programs.
These learning outcomes areas include:
Scholar, Content and technical expertise, Social accountability, Communicator, and ***Professional***

Additional Comments:

Description of Examinations

Exams will have both multiple choice and long answer questions (Mid term and Final exams). Lab reports are based on assignments handed to students after each lab. Class participation section is described below.

Class Participation (worth 20%): Each student will be given a topic to cover in a period of 1.5 hours (one lecture) in the early period of the course. The grade will depend on the effort the student has put to make a good presentation (power point), the content of the slides, additional material provided to class and on the accuracy of the information. Students are encouraged to share other material related to their topic covered with the class. The topics will be:

1. Bacteria, mollicutes, mycoplasma / phytoplasma
2. Viruses, viroids, and virus-like organisms

3. Nematodes and protozoa
4. water molds, oomycetes, chytridiomycetes
5. Ascomycetes and Deuteromycetes
6. Basidiomycetes and parasitic higher plants

Description of Assignments

Assignments are based on labs. Each lab will be followed by an assignment.

Assignment Due Dates

Each assignment is due on the date of the next lab class. That would be one week from the time the assignment is handed over unless a different date is mentioned by the TA or the instructor.

Grade Evaluation

a) Mid-term exam..... 20% (IN CLASS EXAM: to be determined)
b) Class participation 20%
b) Lab reports..... 15%
c) Lab Final exam… 15%
c) Final exam..... 30% (To be scheduled)

Important Dates (e.g., voluntary withdrawal date)

Texts, Readings, Materials

Textbook(s) – Authors, Titles, Edition

Text (**Required**): **Plant Pathology (Fifth Edition) by G.N. Agrios (from Bookstore)**
Text (Optional): Diseases of Field Crops in Canada (Third Edition) by Bailey etal.

Supplementary Reading

Journals: Phytopathology, Plant Disease, Can. J Plant Pathology, Plant Pathology, European Journal of Plant Pathology.

Additional Materials

Additionally you are encouraged to read and view material on authentic plant disease websites on the net.

Course Policies

Late Assignments

The student will lose marks that are assigned for each assignment unless handed over on time.

Missed Assignments

The student will lose marks that are assigned for each assignment if an assignment is missed. If there is a valid reason (i.e. medical in nature) the student needs to meet with the instructor (and not the TA) to discuss this, and if it was for any medical reasons, hand over a medical certificate signed by an authorized medical professional.

Missed Exams

The student will lose marks that are assigned for each exam if an exam is missed. If there is a valid reason (i.e. medical in nature) the student needs to meet with the instructor to discuss this, and if it was for any medical reasons, hand over a medical certificate signed by an authorized medical professional. Then the marks will be added to the next exam (i.e. final exam) and graded accordingly. The students may not miss the final exam as there would be no choice in adding marks at that time.

Academic Integrity

Plagiarism or any other form of cheating in examinations, term tests or academic work is subject to serious academic penalty. Cheating in examinations or tests may take the form of copying from another student or bringing unauthorized materials into the exam room. Exam cheating can also include exam impersonation. A student found guilty of contributing to cheating in examinations or term assignments is also subject to serious academic penalty. Students should acquaint themselves with the University's policy on plagiarism, cheating,

exam impersonation and duplicate submission (see Section 7, p. 29 in the University of Manitoba Undergraduate Calendar 09/10.

Additional Comments:

Use of Third Party Detection and Submission Tools
Electronic detection tools may be used to screen assignments in cases of suspected plagiarism.

Group Work Policies:

Course Content

Topic	Lecture Date or Number of Lectures