

BI502B- Phytobacteriology
Course Syllabus
Fall, 2009
Mon/Wed, 2:00-3:15 PM

Instructor and Office Hours:

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Office hours: arranged (call or email)

Course Structure:

Lectures/paper discussions on Mon and Wed (2:00 – 3:15 PM); 1 credit

Required Text:

None.

Recommended Background Reading:

Phytobacteriology: Principles and Practice by J.D. Janse. 2006. Cabi Publishing.
Plant-Associated Bacteria by S.S. Gnanamanickam. 2007. Springer. Dordrecht.
Bacterial Plant Pathology: Cell and Molecular Aspects by D. Sigeo, 1993. Cambridge University Press, Cambridge.
Fundamentals of Bacterial Plant Pathology by Masao Goto, 1992 (English edition). Academic Press, Inc.
Laboratory Guide for Identification of Plant Pathogenic Bacteria. N. W. Schaad, editor. APS Press, The American Phytopathological Society, St. Paul, Minnesota.

Useful Weblinks:

<http://www.pk.uni-bonn.de/ppigb/bacterio.htm>
<http://www.bacterio.cict.fr/> List of prokaryotic names with published standing

Course Overview:

The course is designed to present an overview of the broad range of interactions that bacteria have with plants, with an emphasis on interactions leading to disease. Particular emphasis will be given to the major groups of plant pathogenic bacteria, the diseases they cause, and how they cause various disease phenotypes. This course builds upon basic concepts provided in an introductory plant pathology course, such as PD361, and assumes a basic knowledge of microbiology.

Objectives:

1. To promote integration of concepts in microbial ecology, physiology, genetics within the context of interactions with plants.
2. To provide current information on plant-bacterial interactions involved in plant diseases

Exams:

There will be one exam, a final (60 points), that will be comprehensive. It will contain short answer and multiple choice questions.

Grades:

The final will be worth 60 points; class participation will be worth 10 pts; homework will be worth 30 pts. Grades will be based on a percentage of the total points possible. Grades will be assigned according to a grading scale (i.e. 90-100% = A, 80-89 = B, etc.).

LECTURE TOPICS/SCHEDULE
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Date	Lecture Topic
Sept 30	Introduction: History of Phytobacteriology, Structure of bacteria; Taxonomy & Classification of bacteria)
Oct 5	DNA transfer, Plant associations, Pathogenesis (invasion, movement, pathogenicity and virulence factors)
Oct 7	Detection and diagnosis of bacterial plant pathogens (Microbial Forensics)
Oct 12	Gall diseases
Oct 14	Soft rot diseases (Dr. Courtney Jahn)
Oct 19	Leaf spot diseases
Oct 21	Blight and wilt diseases
Oct 26	Scorches & Exercises
Oct 28	Yellows diseases
Nov 2	Final exam