

BSPM502B- Plant bacteriology
Course Syllabus
Fall, 2013
(STARTING Sept 30-November 5; 5 wk course)
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. The lectures/discussions will be developed from current literature.

Recommended Informational Materials (if you need background):

Plant Bacteriology. C. I. Kado. 2010. APS Press.

Phytobacteriology: Principles and Practice by J.D. Janse. 2006. Cabi Publishing. (This link says it can be downloaded for free; I did not try:

http://ebookey.org/Phytobacteriology-Principles-and-Practice_351790.html)

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 provides 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 on 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, and assumes a basic knowledge of microbiology.

Learning Outcomes:

1. To enable integration of concepts in microbial ecology, physiology, molecular biology, and genetics within the context of interactions with plants.
2. To be current in information on how bacteria cause disease on plants.

Exams:

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

Homework:

Two homework assignments will be assigned. The first assignment will be for each student to develop a two page case study on an assigned bacterial pathogen that will describe host and host range, tissue specificity, virulence factors produced, symptoms caused, etc. The second assignment will be a problem set that introduces students to tools that enable mining of information on bacterial virulence, ecology, etc. from microbial genome sequences.

Grades:

The final will be worth 60 points; class participation will be worth 10 pts; homework will be worth 30 pts (15 pts each). Grades will be based on a percentage of the total points possible. Grades will be assigned according to a grading scale (i.e. 95-100% = A+, 89-94% = A, 83-88 = B+, etc.).

**LECTURE TOPICS/SCHEDULE
BSPM 502B - Phytobacteriology
Fall, 2013**

Date	Lecture Topic
Sept 30	Introduction: History of Phytobacteriology, Structure of bacteria; Taxonomy & Classification of bacteria)
Oct 2	DNA transfer, Plant associations, Pathogenesis (invasion, movement, pathogenicity and virulence factors)
Oct 7	Detection and diagnosis of bacterial plant pathogens; Comparative genomics
Oct 9	Gall diseases
Oct 14	Soft rot diseases
Oct 17	Leaf spot diseases
Oct 17	Blight and wilt diseases
Oct 21	Scorches & Exercises
Oct 23	Yellows diseases
Oct 28	Summary
Nov 3	Final exam