

## Botany 350: Plant Pathology

Please fill out a card:

Name:

Year in College:

Major:

Hobbies:

Post graduate hopes/plans:

What Do You Most Want to Learn from  
this Class?

## Botany 350/550:

- Instructor: Ken Johnson
- TA's: Natasha Cerruti, Clare Elliott  
Lecture: MWF
- Lab: Tuesdays
- Ken's office hrs MWF: after lunch  
Th: 10:30
- Course web site:

[www.science.oregonstate.edu/bpp/bot350/index.html](http://www.science.oregonstate.edu/bpp/bot350/index.html)

## Botany 350:

- Text: Schumann & D'Arcy 1<sup>th</sup> ed.
- Teaching Materials Web site:  
[APSnet Education center](#)  
Plant Disease Lessons  
Glossary
- Lab Manual: required \$15  
(purchase at first lab, i.e. the field trip) 😊
- Suggested text for Bot 550: Agrios, 5<sup>th</sup> Ed., Plant Pathology

## First Lab (tomorrow) is a field trip

Three Departures:

The first leaves at 8:55, return at 10:45

Second leaves at 10:55, return at 12:45

Third leaves at 1:55, return at 3:45

Meet in the garden near the northwest  
corner of Cordley Hall

## Botany 350: Course Objectives

- Awaken you to the microbial world
- Appreciate plant diseases
- Know how to diagnose plant disease
- Learn biology of plant pathogens
- Understand strategies for disease control

## Botany 350: Course Format

Lecture emphasis

Concepts central to plant pathology  
Pathogen biology (Mondays)  
Disease development in populations  
Disease management

Lab activities

Kinds of diseases  
Pathogen I.D.  
Diagnosis

## Last page of Syllabus: Disease list

- The course will emphasize diseases of plants caused by biotic agents (microbes)
- Typically, for intro plant path, a group of “significant” diseases are used to illustrate pathogen biology and disease principles
- Exam questions frequently revolve around these diseases and the causal pathogen
- The APS Education Center Website a published ‘disease lesson’ on each disease

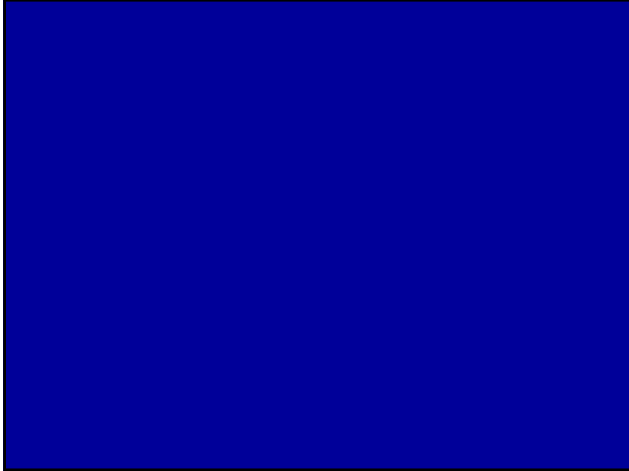
## Botany 350: Course Requirements

Grading:

Midterm exam I	100
Midterm exam II	100
Lab final	100
Final exam	150

Disease-of-the-week	50
Lab quizzes	50

-----  
550



## Significance of Plant Disease

### Case study: Late Blight of Potato

- Pathogen: Oomycete native to Mexico
- Irish potato famine 1845-46
- Birth of plant pathology – deBary 1861
- 1995 Cost of potato late blight in the Columbia Basin of OR & WA?  
yield reduction, disease suppression, storage loss



## Late Blight of Potato

- “The impact of this disease has been impressive. In 1995 alone, the total cost of managing late blight in the Columbia Basin of Washington and Oregon (where the number of fungicide sprays increased from 2.5 in 1994 to 10 in 1995) is estimated to have approached \$30 million.”

APSnet Feature, 1998  
Potato Late Blight  
Mary Powelson and Debra Inglis

## Significance of Plant Disease

### Current Situation –

- 10% of all food production is lost to disease (30% to all pests)
- The introduction of exotic plant pathogens has caused great losses: American elm & chestnut  
Many additional threats: sudden oak death, soybean rust
- Plant pathogens can restrict trade
- Each year, suppression of plant disease costs billions of dollars
- Pathogens continually evolve:
  - break resistance in host crops
  - develop insensitivity to chemicals