

A Must Take Course for Fall 2008

- Do you know that without fungicides, 95% of the nation's grape crop would rot, and 86% of apples and 54% of peaches would be destroyed by pathogens?
- Do you know that virus diseases cause economic losses due to reduced crop yield and fruit quality ?



Want to know more about serious plant diseases affecting tree fruits, small fruits, and grapes in Washington State?

Join the course **Diseases of Fruit Crops** **PI P 300 (2 Credits)**

Contact Lead Instructor:
Naidu Rayapati (naidu@wsu.edu)

Where : WSU - Pullman and Tri-Cities Campuses

When : Tue, Thu 9:10 – 10:00 AM

How : Via WHETS

Venue : Check METRO a few days before class starts for class rooms

SLN : Pullman Campus: 82057; Tri-Cities Campus: 84186

COURSE OUTLINE

PI P 300: Diseases of Fruit Crops (Through WHETS)

Lecture Schedule: Fall 2008

Lead Instructor: Naidu Rayapati, Department of Plant Pathology, Washington State University (WSU), Irrigated Agriculture Research and Extension Center, Prosser, WA 99350.

Contact: Office: 509-786-9215; E-mail: naidu@wsu.edu; 103 Hamilton Hall, IAREC, Prosser.

Guest lectures: Faculty in the Department of Plant Pathology, Crop and Soil Science and Horticulture.

Week	Date	Lecture Topic
I. Introduction to fruit crops		
1	Tuesday (8/26/08)	Introduction to the course
	Thursday (8/28/08)	Fruit industry in Washington State Significance of diseases to fruit industry
II. Diseases of fruit crops caused by graft-transmissible agents		
2	Tuesday (9/2/08)	Nature and biology of plant viruses
	Thursday (9/4/08)	Diagnosis and spread of viruses
3	Tuesday (9/9/08)	Management of virus diseases
	Thursday (9/11/08)	Viroids
4	Tuesday (9/16/08)	Exam-1
	Thursday (9/18/08)	Virus diseases of the grapevine
5	Tuesday (9/23/08)	Disorders mimicking viral diseases of the grapevine
	Thursday (9/25/08)	Virus diseases of small fruits
Friday-Sunday (9/26-28/08 or 10/3-5/08): Field visit to IAREC, Prosser		
6	Tuesday (9/30/08)	Virus diseases of fruit trees
	Thursday (10/2/08)	Nature, biology and diagnosis of prokaryotes (bacteria and phytoplasmas)
7	Tuesday (10/7/08)	Crown gall
	Thursday (10/9/08)	Pierce's disease and fire blight
8	Tuesday (10/14/08)	Exam -2
III. Plant parasitic nematode problems in fruit crops		
8	Thursday (10/16/08)	Overview of plant parasitic nematodes
9	Tuesday (10/21/08)	Management of plant parasitic nematodes
IV. Diseases of fruit crops caused by fungi		
9	Thursday (10/23/08)	Nature and biology of fungi
10	Tuesday (10/28/08)	Epidemiology of fungal diseases
	Thursday (10/30/08)	Overview of post-harvest diseases
11	Tuesday (11/4/08)	Management of post-harvest diseases
	Thursday (11/6/08)	Exam – 3

12	Tuesday (11/11/08)	University holiday (Veterans' Day)
	Thursday (11/13/08)	Fungal diseases of tree fruits
13	Tuesday (11/18/08)	Fungal diseases of grapevines
	Thursday (11/20/08)	Fungal diseases of small fruits
November 24-28: Thanksgiving Holiday		
14	Tuesday (12/2/08)	Management of fungal diseases (case studies)
	Thursday (12/4/08)	Management of fungal diseases (case studies)
V. Crop improvement strategies against diseases		
15	Tuesday (12/9/08)	Traditional and molecular approaches, and challenges in perennial crops
	Thursday (12/11/08)	Virus indexing and certification programs
16	Tuesday (12/16/08)	Exam – 4

Field Trip:

Field trip is an important learning experience and provides a unique opportunity for students to understand the 'real world' disease problems caused by various pathogens. Therefore, field trip is mandatory for the class. A field trip to IAREC, Prosser, will be offered between September 26th - 28th or October 3rd - 5th. The field trip will focus largely on diseases of grapes (fruit trees and small fruits, if available) and discussions with faculty and growers. All students have to submit a report (3-4 pages) describing their learning experiences within fifteen days after the field visit. Transportation will be provided, subject to availability of funds, to students in Pullman and Tri-Cities campuses. Students from other locations, if enrolled, are encouraged to carpool. Field trip travel guidelines as outlined in the university's BPPM 95-13, *Student Travel*, (<http://www.wsu.edu/%7Eforms/PDF/BPPM/95-13.pdf>) will be followed in arranging the field trip to IAREC, Prosser. Reasonable accommodation for overnight stay, if available, will be provided either in the dormitories at IAREC, Prosser or at an alternative place. Students are responsible for their own boarding. No excuses will be acceptable for missing the class field trip EXCEPT a medical or family emergency (proof is required from a competent authority acceptable to WSU). Failure to participate in the field trip will automatically reduce the grade by one level, i.e. a 'A' will become a 'B'.

Grading:

For the lecture portion, there are four exams, each carry 100 points. No final exam. The exams will take the form of fill-in-the-blank, multiple choice and short answer questions. The short answer questions will be "thought-provoking" and are designed to require application of information presented in class to real-world situations. The exam(s) will also be supplemented, if required, with assignments/Quizzes at the discretion of the instructor. Misspelling of scientific names of fruit crops and pathogens will cost points. Field visit will carry 100 points. It will be graded based on student participation in the field trip and quality and timely submission of the report describing the experiences and knowledge gained. Thus, lecture portion carry 80% (400 points) and field visit carry 20% (100 points) of total grades.

Exams will be conducted similar to courses offered through WHET System by other WSU faculty. Question paper will be delivered to the students in the class by the lead instructor or through WHET System coordinator. In the latter case, the WHET System coordinator will collate the answer papers and deliver to the lead instructor for grading. Students will be monitored during the exam by the WHET System coordinator.

Grading Scale:

A = 90 – 100% (450-500 points)

B = 80 – 89% (400-449 points)

C = 70 – 79% (350 – 399 points)

D = 60 – 69% (300 – 349 points)

F = Below 60% (\leq 299 points)

Class Attendance:

Class attendance is very important. Missing even one class will put students out of synch with the course leading to poor performance in the exams. Students are encouraged to ask questions during the lecture or outside the class time. Due to physical location of the lead instructor and guest lectures, arrangements will be made by appointment to answer questions (via telephone, e-mail and/or fax), if students would like assistance with class materials.

Student Evaluations:

Students will be encouraged to participate in on-line evaluations. In order to increase response rate, a minor incentive of 10 points (10 points of total 500 points, which is 2%) will be added at the end of semester final grade to those students who have completed evaluations on time.

Disability Services Reasonable Accommodations Statement:

Reasonable accommodations are available for students with a documented disability. If you have a disability and may need accommodations to fully participate in this class, please visit the Disability Resource Center (DRC). All accommodations MUST be approved through the DRC (Admin Annex Bldg, Room 205). You will need to provide your instructor with the appropriate classroom accommodation form. The form should be completed and submitted during the first week of class. Late notification can delay your accommodations or cause them to be unavailable. All accommodations for disabilities must be approved through the Disability Services Coordinator.

For students at Pullman campus: Stop by or call 509-335-3417 to make an appointment with a disability specialist. If you have any questions, please contact Rosie Pavlov 509-335-3417.

For students at Tri-Cities campus: If you have a documented disability, even temporary, make an appointment as soon as possible with the Disability Services Coordinator, Cherish Tijerina, Room 269D West Building.

Academic Dishonesty:

All students enrolled in the class are expected to remember and practice Academic Honesty in fulfilling all of the course requirements as outlined in the syllabus. Students are expected to read the Washington State University Policy on Academic Dishonesty handbook. They can request a hard copy from the Office of Student Affairs on the Pullman campus (360 Lighty, 509-335-4531) or by downloading a copy from the WSU website (http://www.studentaffairs.wsu.edu/hb_standards.asp#ac160, WAC Number 504-25-015).

University emergency management:

Washington State University is committed to maintaining a safe and secure environment for students, faculty, staff, and visitors on Pullman, Tri-Cities and other campuses. The university continues to improve emergency management strategies and takes a broad range of proactive measures aimed at safety and well-being of its members in these campuses. Visit the Office of Emergency Management (<http://oem.wsu.edu/emergencies>) and WSU ALERT site (<http://alert.wsu.edu>) for detailed information about campus safety and security, and relevant notification during emergencies.

REQUIRED TEXT:

Few text books exclusively cover diseases of fruit crops. General plant pathology text books, compendia of specific fruit crop diseases, and current information from the primary literature (journal and review articles and web sites) will be recommended.

Preferred text book:

Essential Plant Pathology. 2006. APS Press, St. Paul. 338 pp.
Authors: Gail L. Schumann and Cleora J. D'Arcy

Alternate text book:

Plant Pathology 5th Edition. 2005. Academic Press, New York. 922 pp. Author: George N. Agrios

REFERENCES:

I. Crop-specific books/compendia:

Grape Pest Management. Second Edition. 1992. University of California-Davis.

Graft-transmissible diseases of grapevines. 1993. Edited by G.P. Martelli. FAO, Rome.

Compendium of Grape Diseases. 1988. Edited by R.C. Pearson and A.C. Goheen. American Phytopathological Society press, St. Paul.

Compendium of Apple and Pear Diseases. 1990. Edited by A.L. Jones and H.S. Aldwinckle. American Phytopathological Society Press, St. Paul.

Compendium of Strawberry Diseases. 1998. Edited by J.L. Maas. American Phytopathological Society Press, St. Paul.

Compendium of Raspberry and Blackberry Diseases and Insects. 1991. Edited by M.A. Ellis, R.H. Converse, R.N. Williams and B. Williamson. American Phytopathological Society Press, St. Paul.

Integrated Pest Management for Stone Fruits. 1999. UC IPM Publication No. 3389. University of California, Davis.

Compendium of Stone Fruit Diseases. 1995. Edited by J.M. Ogawa, E.I. Zehr, G.W. Bird, D.F. Ritchie, K. Uriu, and J.K. Uyemoto. American Phytopathological Society Press, St. Paul.

Virus/Viruslike Diseases of Pome Fruits, Simulated Noninfectious Disorders. Edited by Paul Fridlund. Washington State Extension Bulletin No. SP0003. 1989.

Virus Diseases of Small Fruits. USDA ARS Agriculture Handbook No. 631. Edited by R.H. Converse. 1987. 277 pp.

Manual of Agricultural Nematology. Nickle, W.R. 1991. Marcel Dekker, Inc. New York.

Postharvest Diseases of Fruits and Vegetables – Development and Control. Barkai-Golan, R. 2001. Elsevier Science B.V. 418pp.

Post Harvest Technology of Horticultural Crops. Kader, A. A. 2002. University of California Agricultural and Natural Resources Publication 3311. 535pp.

II. Supplemental references:

Famine on the Wind: Man's Battle Against Plant Disease. 1967. Rand McNally & Co., 231 pp.
Authors: G.L. Carefoot and E.R. Sprott.

Plant Diseases: Their Biology and Social Impact. 1991. APS Press, St. Paul. 397 pp. Author: G.L. Schumann.

History of fruit growing and handling in United States of America and Canada 1860-1972. 1976. Regatta City Press Ltd. 360 pp. Edited by: D.V. Fisher and W.H. Upshall.

III. Web sites:

<http://wine.wsu.edu/virology/>
<http://americanpomological.org/>
<http://plant-disease.ippc.orst.edu/index.cfm>
<http://www.agf.gov.bc.ca/cropprot/tfipm/treefruitipm.htm>
<http://www.caf.wvu.edu/kearneysville/wvufarm11.html>