BSPM 365 INTEGRATED TREE HEALTH MANAGEMENT Fall 2009

4 credits-----3 lectures/week------1- 3-hour lab/week-------Prerequisite: One class in basic Biology

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COURSE OBJECTIVES: Students will:

1. Know and understand the impact and nature of the change or disturbance to forest ecosystems and forest products caused by insects and diseases.

2. Be able to diagnose the major insect and diseases affecting forest ecosystems of North America.

3. Know and understand the factors affecting the development of diseases and insects in forest ecosystems, the interaction of insect and diseases with each other and with other components of the ecosystem, and the relation of this information to the selection of economically and biologically feasible management strategies and tactics.

4. Be able to present written and oral management solutions for insect and disease case studies

Lectures: Monday, Wednesday, Friday - 8:00- 8:50 a.m., Room C358 Clark

Laboratory: Section 1 - Tuesday - 10:00 am - 1:00 p.m., E-009 Plant Science
Section 2 - Thursday – 2:00 pm – 4:50 p.m., E- 009 Plant Science

Text: **Required**:

1. BSPM 365, Integrated Tree Health Management Laboratory, University Text- Includes lecture notes

2. Insects and Diseases of Woody Plants of the Central Rockies, Colorado State University, Extension Publication 506a, available at the Cooperative Extension Resource Center, General Services Bldg.

Highly Recommended:

1. Manion, P.D. 1990, Tree Disease Concepts, Prentice-Hall.
2. Coulson and Witter 1984, Forest Entomology, John Wiley and sons
3. Sinclair, W.A., et al. 2005, Diseases of Trees and Shrubs Second Edition, Cornell Univ. Press.
4. Johnson and Lyon 1988, Insects that Feed on Trees and Shrubs, Cornell University Press
5. Tainter and Baker 1996, Principles of Forest Pathology, Wiley and Sons, INC
6. Edmonds, Agee, and Gara. 2000. Forest Health and Protection. McGraw-Hill, 630 pp
7. Barbosa, P. and Wagner, M. R. 1989. Introduction to forest and shade tree insects. Academic Press, INC. 639 pp

Course Grading and Requirements:

	Points
Lecture exams (2)	200
Final Exam (1)	150
Case Study Report (1)	100
Insect and Disease Col. (6@10)	60
Laboratory quizzes (12 of 13 @ 15)	165
Inoculation experiment lab report	25
Lab mastery (13@ 5)	65
Oral Report on case study	25
Lecture Group problems	20-30
Bonus Points (Make an appt and visit with Bill Jacobi before Oct. 15)	10
Total	795-805

1. We will have two lecture exams and one final that covers the last third of the class (70%) plus comprehensive questions (30%).

2. A case study on a tree health situation, supplied by instructors or student in consultation with instructor, is due in early November- see schedule for due date.

3. An insect and disease collection consisting of 6 items is required in September- see schedule for due date.

4. There will be 13 laboratory quizzes covering the previous lab(s) contents. The lowest quiz grade will be dropped. At least 25% of the quiz material will be "practical" or sight identification.

5. A required all day field trip to the Poudre Canyon and Pingree Park, 7:30 to 4:30 on Saturday, September 19,2009. Good notes are recommended since quizzes and hour exams will cover this material. If you cannot attend the field trip you will need to provide an additional 3 insect and 3 disease specimens for your collection.

BSPM 365- INTEGRATED TREE HEALTH MANAGEMENT
Fall 2009 Schedule

DATE	**TOPIC**
Aug. 24	Introduction and Organization & Insects and Disease Basics. (Jacobi)
26	Insect and Disease Basics (Jacobi)
28	Plant Defense, Management Techniques, History (Jacobi)
25 & 27	(Lab 1) Campus tour, Collection Instruction and Clinic Tour, Case Studies, and Microscopes
Aug 31	Abiotic Diseases one (Jacobi)
Sept 2	Abiotic Diseases two (Jacobi)
4	Air Pollution & Climate Change (Jacobi)
1 & 3	(Lab 2) Symptoms & Signs, collections, Information Sources, and Abiotic Diseases. **Inoculation experiment**
Sept. 7	**No Class, University Holiday**
9	Fungi and disease cycles (Jacobi)
11	Mycorrhizae and Root Diseases (Jacobi)
8 & 10	(Lab 3) Mycology I - **Quiz 1 –Library Class at 12:00**
Sept. 14	Decay Type Root Diseases (Jacobi) **Case Study Outline Due**
16	Decay in living trees (Jacobi)
18	Decay recognition (Jacobi)
15 & 17	(Lab 4) Mycology II - **Quiz 2**
Sat 19th	**Field trip to mountains. 7:30 am- 4:30 pm**
Sept. 21	Cankers (Jacobi)
23	Cankers and Rusts (Jacobi)
25	Rusts (Jacobi)
22 & 24	(Lab 5) Root Diseases, **Quiz 3**, **lab partners compare case studies**
Sept.28	**Exam** (Jacobi Monitor)
30	Insects as disturbances, Entomologists/Pathologists do what? & Research Methods (TA)
Oct. 2	Principles of Insects, Morphology, Physiology and Classification (Cranshaw)
29 & 1	(Lab 6) Decay, Stains and Hazard trees & Ralph Zentz demonstration - **Quiz 4**
Oct 2	**Collection due in Lab by 4 pm Friday**
Oct. 5	Principles of Insects (Cranshaw)
7	Principles of Insects (Cranshaw)
9	Bud and Shoot Insects (Cranshaw)
6 & 8	(Lab 7) Rusts and Cankers (TA) **Quiz 5** **Case Study "Format Draft" with peer review due Friday by 4 pm**
Oct. 12	Sucking Insects I (Cranshaw)
14	Sucking Insects II (Cranshaw)
16	Beneficial Insects and Biocontrol Agents (Cranshaw)
13 & 15	(Lab 8) Insect Classification (TA) **Quiz 6**
Oct. 19	Cone and Seed Insects (Klutsch)
21	Bark Beetles I (TA)
23	Vascular Wilts (Jacobi)
20 & 22	(Lab 9) Sucking, Cone, Seed, Bud and Shoot Insects - **Quiz 7**
Oct. 26	Bark Beetles II (TA)
28	Wood Borers (TA or Jacobi)
30	Gall Formers (Cranshaw) **Case Study final draft due to Jacobi and peer editors**
Oct. 27 & 29	(Lab 10) Bark Beetles and Vascular Wilts (TA/Jacobi) - **Quiz 8**

Fall 2009

DATE	TOPIC
Nov. 3	Animal Damage (Jacobi)
5	Defoliators I (Jacobi or TA)
7	Defoliators II (Jacobi or TA)
4 & 6	(Lab 11) Wood Borers and Animal Damages (TA/Jacobi) - **Quiz 9**
Nov. 9	Foliar Diseases (Jacobi)
11	Parasitic Plants (Jacobi)
13	**Exam** (Jacobi Monitor)
10 & 12	(Lab 12) Defoliators, Gall Formers and Beneficial Insects (TA/Jacobi) - **Quiz 10**
Nov. 16	Bacteria and Phytoplasma Diseases (Jacobi)
18	Virus and Nematode Diseases (Jacobi)
20	Nursery Pest Management (Jacobi) **Final Version CASE STUDY DUE 4pm in Jacobi mail box/and by email attachment**
17 & 18	(Lab 13) Foliage, Viral, Bacterial, and Pesticide Safety - **Quiz 11**
Nov. 23-27	**FALL BREAK**
30	Tree Declines (Jacobi)
Dec. 2	Diseases and Insects as Ecotype Shapers (Jacobi)
4	Impact Assessment Methods, Monitoring and Models (Jacobi)
1 & 3	(Lab 14) Parasitic Plants, and Nematodes (**Quiz 12-Diagnostic/Practical Exam**) **Abstracts for Oral Report on Case Study due –Friday Dec 4th send via email to TA**
Dec. 7	"Real Live tree health issues" (Jeff Witcosky)
9	Ecosystem Health and Ecosystem Management no lecture notes (Jacobi)
11	Group Eco Reports (Jacobi)
8 &10	**Oral Reports on Case Studies** - **Quiz 13 (covers lab 13 and 14)**

Final Exam: 3:40 to 5:40 PM, Thursday, December 17, 2009 in Room C 358 Clark

Integrated Tree Health Management

Student Information Sheet- Please fill out and turn in on Day one of the class. Thanks.

Name_____

Major_____

Home town_____

I am taking this class
because_____
_____

My experience with trees is based
on_____
_____
_____

I hope to utilize my college education with a career in (be as specific as you can)
_____

Is there any specific topic on tree health that you are interested in or would like to see addressed this term? _____

SEVEN SKILLS EMPLOYERS WANT

LEARNING to LEARN
(The ability to apply new information quickly and effectively)

LISTENING and ORAL COMMUNICATION

COMPETENCE in READING, WRITING and COMPUTATION

ADAPTABILITY: CREATIVE THINKING and PROBLEM SOLVING

PERSONAL MANAGEMENT: SELF-ESTEEM, GOAL SETTING, MOTIVATION, and PERSONAL, CAREER DEVELOPMENT
(Taking responsibility for enhancing job skills to meet new challenges and achieving pride and satisfaction in accomplishments. Looking further ahead to develop broader skills useful for advancement and a satisfying life.)

GROUP EFFECTIVENESS: INTERPERSONAL SKILLS, NEGOTIATION and TEAMWORK
(Workplace success depends on enhancing respect for contributions from all members of an organization.)

ORGANIZATIONAL EFFECTIVENESS and LEADERSHIP
(Employers desire people with a sense of direction and purpose, an awareness of how they themselves can contribute, and the ability to motivate coworkers to contribute the best of themselves.)