

College of Public Health

Date approved by the home Department: 3/25/05

Date approved by the CPH Curriculum Committee: 4/4/05

I. COURSE NUMBER AND TITLES

Course Number: 173:157
Official Title: Zoonotic Diseases
Transcript Title: Zoonotic Diseases

II. BRIEF COURSE DESCRIPTION

This course will introduce public health students to the epidemiology and control of zoonotic diseases. It will emphasize zoonoses endemic to the Midwestern United States.

III. CREDIT HOURS

2 s.h. or 3 s.h. Students selecting the 3 s.h. option will be required to attend additional class meetings and complete an additional assignment.

IV. SCHEDULING

Summer semester, annually.

V. CROSS-LISTED COURSE NUMBER AND DEPARTMENT

None

VI. COURSE DIRECTOR / INSTRUCTORS

Course director: Gregory C. Gray
Other instructors: Various

VII. DEGREE PROGRAMS REQUIRING THIS COURSE

None

VIII. COURSE PRE-REQUISITES

One of the following courses (or equivalent):

61:164 Microbiology
61:112 Health Sciences Microbiology
61:157 General Microbiology
61:103 Principals of Infectious Diseases
173:155 Epidemiology of Infectious Diseases
173:255 Diagnostic Microbiology for Epidemiologists

IX. STUDENTS FOR WHOM THE COURSE IS INTENDED

Masters.

This course is primarily designed for public health students seeking careers in infectious disease epidemiology.

X. RELATIONSHIP OF THIS COURSE TO OTHER COURSES

Topics discussed in this course supplement disease topics presented in 173:155 Epidemiology of Infectious Diseases. To reduce redundancy, as a number of important zoonoses are discussed in that course (e.g. malaria, rabies, schistosomiasis, trypanosomiasis, tuberculosis, histoplasmosis, HIV, and leishmaniasis) these diseases will not be closely examined in this course. Where a disease topic is covered by both courses (e.g. influenza), lectures will be unique. This course is given by the College of Public Health. This means that class policies on matters such as requirements, grading, and sanctions for academic dishonesty are governed by the College of Public Health.

XI. TEACHING METHODS

This is a 5-day, concentrated, introduction to zoonotic diseases. Students taking the course for 3 s.h. will be required to attend a 6th day of class. Days 1-5 day there will be 3 hours of lecture and 2 or more hours of field activity. Day 6 will involve 4 hours of classroom time in a zoonotic disease small group exercise. The course is comprised of readings, lectures, field studies, laboratory exercises, an examination, and a 10-15 page paper. Lecture presentation files will be made available on a course web site.

XII. EVALUATION OF STUDENT PERFORMANCE

2 s.h. option: Students will be evaluated by their class participation (50%) and a 90-minute, open book, open notes, examination (50%). To earn a B for class participation, students should fully participate and attend every session. To earn an A in classroom participation, students must attend each session and demonstrate that they prepared for lectures/fieldtrips beforehand (through reading assigned text and interacting with the lecturers).

3 s.h. option: : Students will be evaluated by their class participation (33%) and a 90-minute, open book, open notes, examination (33%), and a 10-15 page term paper on a topic related to the course and approved by the instructor (33%) due by mid July. To earn a B for class participation, students should fully participate and attend every session. To earn an A in classroom participation, students must attend each session and demonstrate that they prepared for lectures/fieldtrips beforehand (through reading assigned text and interacting with the lecturers).

XIII. COURSE OBJECTIVES

After completing this course, the student should be able to:

1. Identify surveillance and control measures given a specific zoonotic disease outbreak.
2. Have a fundamental understanding of methods for mosquito collection, identification, and control.
3. Be familiar with methods for tick collection, identification, and control.
4. Have an appreciation for zoonotic disease prevention and control in the agricultural industry.
5. Be familiar with methods for monitoring food-borne pathogens

XIV. INSTRUCTIONAL MATERIALS

Required Text: Krauss H, Weber A, Appel M, Enders B, Isenberg HD, Schiefer HG, Slenczka W, Von Graevenitz A, Zahner H. editors. *Zoonoses. Infectious Diseases Transmissible from Animals to Humans, 3rd edition.* ASM Press, 2003

XV. STUDENTS SHOULD BRING

For field work students should bring a hat for protection from the sun, mosquito and tick repellent, comfortable walking shoes or light boots (long socks covering pant legs work well if you do not have boots), and if desired a camera. The tick, mosquito, and small mammal trapping field work involves walking in prairie grass. The swine barn visit is generally hot as coveralls are worn. Students should bring water to drink on field activities.

TOPIC OUTLINE

Day/Lecture	Title	Speaker	Readings (pages)
Controlling mosquito/sandfly-borne diseases (all students attend these and the remaining lectures)			
Monday 8AM PBB	Welcome and course introduction (10 min)	Gray	
Monday 8:10AM PBB	Vector-borne diseases overview (90 min)	Bartholomay	
Monday 10AM PBB	West Nile virus, other arboviral encephalitis (30 min)	Bartholomay	xi-xiv, 49-51, 4-14;27-31;46-48
Monday 10:30AM PBB	Introduction to small mammal field work (30 min)	Platt	
Monday 11AM PBB	Methods of vector-borne disease surveillance (60 min)	Bartholomay	
Monday 1PM Laboratory 1 Lake McBride	Bus leaves PBB at 1PM for Lake McBride field site; Tick, mosquito, and small mammal trapping	Bartholomay/ Platt	
Controlling tick-borne diseases			
Tuesday 7AM / Laboratory 2 Lake McBride	Bus leaves PBB at 7AM for Lake McBride field site; Mosquito and small mammal collection; Return to class room	Bartholomay/ Platt	
Tuesday 1PM Laboratory 3 PBB	Tick and mosquito identification; pathogen detection in mosquitoes	Bartholomay	
Important zoonoses			
Wednesday 8-10AM PBB	Zoonotic influenza and occupational risk	Gray	133-139
Wednesday 10-12PM Laboratory 4 PBB	Water quality laboratory demonstrations	McCurdy	188-190; 196-200; 234-236
Wednesday 1PM PBB	Lyme disease & giardiasis	Gray	180-183; 280-282
Wednesday 2-4PM PBB	Reducing the risk of zoonotic transmission in the meat processing industry	Mohyla	
Controlling food-borne diseases I			
Thursday 7:20AM / Laboratory 5 West Liberty	Tour of a West Liberty Foods meat processing plant. Bus leaves PBB at 7:20AM	Gray	
Thursday 1PM PBB	Zoonotic infections associated with domestic pets (hookworm, toxoplasmosis, salmonellosis)	Russell	234-236, 307-312, 362, 369
Thursday 2PM PBB	APHIS Activities to Protect against Zoonotic Diseases	Fairchild	
Thursday 3PM PBB	Uncommon zoonoses: Hendra virus, Nipah virus, foot & mouth disease, and newly emergent diseases	Gray	123-127; 141-143
Controlling food-borne diseases II			

<u>Day/Lecture</u>	<u>Title</u>	<u>Speaker</u>	<u>Readings (pages)</u>
Friday 7:30AM / Laboratory 6	Swine barn visit: Biosecurity in confined animal feeding operations. Bus leaves PBB at 7:50AM for Kirkwood College, Cedar Rapids, Vet Tech bldg	Rourke	
Friday 1PM PBB	Cryptosporidiosis	Pentella	278-280
Friday 2PM PBB	Echinococcosis, brucellosis, Q fever, Cysticercosis, taeniasis; 60 min)	Donham	338-343, 185-187; 229-232; 346-351
Friday 3PM/ PBB	Final exam (90 minutes, multiple choice, open notes) bring calculator	Gray	
Special Zoonotic Disease Topics (only those students taking the course for 3 s.h. need to attend this Saturday sessions.)			
Saturday 8AM PBB	Diseases due to <i>Bartenella</i> species	Gray	176-179
Saturday 9AM PBB	Poxvirus infections	Gray	151-164
Saturday 10AM-12PM PBB	Small group zoonotic disease exercise	Various	

Last revised May 6, 2009