VAPH 930 - PUBLIC HEALTH
Semester: Spring 2005, 4 credits
Meets: Tuesday10:00-10:50 am, Thursday 9-10:50 and Friday 10:00 to 10:50 am in Room 5

Instructors:
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Required Text Epidemiology & Public Health: Veterinary Epidemiology, Margaret R. Slater, Butterworth-Heinemann, 2003
Recommended Text Zoonosis Section: David L. Heymann, Editor. *Control of Communicable Diseases Manual* 18th Edition; Washington, DC, American Public health Association, 2004.

Course Goals:
To provide students with information and skills related to the basic principles and applications of epidemiology, public health and food security.

Course Objectives:
1. Students will be able to critically apply the veterinary literature and other information sources to patient care decisions and client education.
2. Students will be able to list the governmental agencies that handle public health issues and know who/where/how to make contact.
3. Students will be know with the common terminology, hazards and control measures in food systems security and the role of veterinarians.
4. Students will be able to describe/discuss current key issues in food systems security in order to be able to educate clients appropriately.
5. Students will be able to identify major zoonotic disease hazards for common veterinary species, assess the risk of disease transmission and describe appropriate control and/or prevention strategies.

ATTENDANCE AND MAKE-UP EXAMINATIONS:
See the Professional Student Handbook for the College policy on Attendance. Attendance at all classes, exercises, quizzes and examinations is required. **No make-up examinations will be provided for students who miss an examination unless an excused or authorized absence is granted**. Students missing an exam without excused or authorized absence will receive 0 points. There will be no exceptions. Make-up examinations will be permitted only in the cases of university excused or authorized absences. The time table for completing the make-up will be set

by the instructor. Students are responsible for all missed work (including check off and graded work) regardless of type of absence. For excused or authorized absences, student may make up the work; it will be due at a time designated by the instructor.
Check off assignments will be counted as long as the student has made a good faith effort to do the work. Students who have not made such an effort will not receive credit for the assignment. Students are also responsible for checking their email for any announcements or reminders about the course during the semester.

NOTICE:
The course instructors reserve the right to administer **unannounced quizzes** during any class.

HONOR CODE AND PROFESSIONAL ETHICS:
"Since the integrity of the veterinary medical profession is a reflection of the sum of the integrity of its members, veterinary medical students should conduct themselves..... in an exemplary ethical and professional manner. (Professional Student Handbook)"

Scholastic dishonesty, in any form, will not be tolerated. This means no cheating of any kind. Scholastic dishonesty includes, but is not limited to, looking at examination of another student, consulting notes or references during a closed book examination, providing information or seeking information from another student during an examination or between laboratory and written examination sessions, accessing an unauthorized website during an examination, plagiarism, etc. **The instructors reserve the right to dismiss from the course and administer a course grade of "F" to any student involved in incidents of scholastic dishonesty**.

On all examinations, students will confirm their compliance with the College's Honor Code by writing and signing the following statement:

"On my honor, I have neither given nor received and aid on this examination."
_____ (student signature)

A student who does not sign the pledge will be asked to do so before the examination is graded. The pledge serves primarily as a reminder to the student and teacher that the College has an Honor Code, however, absence of the signed pledge does not remove an examination from coverage by the Honor Code.

Lastly, **it is both professional and courteous to come to class on time.** Entering the classroom after the beginning of class is disruptive to your classmates.

ADA POLICY STATEMENT:
The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe that you have a disability requiring accommodation, please contact the Department of Student Life Services for Students with Disabilities in Room 126 of the Koldus Building promptly at the beginning of the semester. The phone number of this office is 845-1637.

COURSE GRADING:

Epidemiology & Public Health, classes 1- 39 will count for 67% of the course grade.
Zoonoses, classes 40 – 60 will count for 33% of the course grade.

For Epidemiology & Public Health section:
- 26%: graded exercises
- 15%:quizzes
- 25% ungraded but required exercises
- 34%: exams 1 & 2

For Zoonosis section:
- 30% presentation
- 30% powerpoint slides and client information sheet.
- 10% student evaluations their group members
- 30% zoonoses examination.

ZOONOSES PRESENTATIONS:

The objective of these presentations is to allow you to use what you know about the assigned zoonotic disease, plus any written or web page sources of information, to solve a real-world type of zoonotic disease problem just like you may experience in practice after graduation from the CVM.
The assignment for each zoonosis group consists of five elements: 1) power point slides; 2) a client information sheet; 3) an oral presentation; 4) a case study within the oral presentation; and, 5) a confidential evaluation of each of the other members in each group.
Power Point Slides: You can use any source of information except faculty or students outside your Group. If you use printed materials, only current texts or journals published in the last three years will be acceptable. If you use online sources, use only those of professional organizations (e.g. AVMA), recognized disease control agencies (e.g.,CDC) or academic institutions (e.g. St. Louis University). List references in appropriate slides or at the end of the slide presentations. and prepare a one-page, bullet-point, client education handout.
Each Group will send or e-mail the instructor a PowerPoint draft and a client information sheet at least ten (10) days before the group is scheduled to present their zoonotic disease information to the class. The instructor for the zoonoses section will critique the PowerPoint materials, and will inform each group of errors or deficiencies in their materials at least 5 days before their assigned presentation date. Once the materials are corrected, the group's PowerPoint presentation will be placed on "T" drive where it will be available to the VAPH 930 class for their review and study.
Client Information Sheet. This should be written in non-scientific language, and should tell the client about the zoonotic potential that his or her animal is presenting. Also, you need to educate all of your clients on how to prevent exposure of their animals and humans to the suspected zoonosis. The client information sheet should be attractive (with art work), bullet-pointed, and short (one or two pages).
Use your creativity, imagination, problem-solving ability, knowledge of the zoonoses, and Aggie teamwork in your zoonoses assignment.
Oral Presentation: This presentation will be prepared by the entire Group. Use you scientific

zoonoses knowledge. The presentations will use these PowerPoint visuals, with current references or WWW sites. It is up to you who and how the oral assignment will be presented. Be creative, but also be professional. You will have a question period at the end of your oral presentation. Every member of the group must have an actively visible part in the class presentation. Allow at least seven minutes for questions at the end of your presentation.
The presentations will include the following (each of the 10 parts will be worth 10%):
1**. Definition** of the zoonoses. Common names that may be used, e.g. mad cow disease for bovine spongiform encephalopathy.
2**. Etiology:** The agent characteristics that are responsible for its occurrence in an area; e.g., the spore of *Bacillus anthracis* persists for decades in the soil of some places in Texas.
3. **Occurrence**: Where and when does the disease usually occur. Who does it affect? Example: Bat rabies occurs in the US in late summer. Over 75 % of cases in the US during the past 15 years have been caused by bat-types of rabies viruses.
4. **Clinical Manifestations**: Clinical signs of the disease in humans; e.g., leishmaniasis may cause severe disfiguring skin lesions in people as well as serious disease of the visceral organs. Include the major clinical signs of animals that the veterinary practitioner should know. For example, what are the clinical signs of sylvatic plague that are presented by the domestic cat.
5. T**ransmission**: The source of exposure and mode of transmission from the animal host to humans. Also, the reservoir animal: e.g., in Western Equine Encephalitis, the reservoir seems to be passerine birds, and the source is the mosquito, *Culex tarsalis.*
6. **Diagnosis:** The " gold standard" for diagnosis in humans, and animals if they are available; e.g., the Lyme Disease ELISA test for humans, and SNAP" test for dogs.
7.**Differential Diagnosis**: Include the diseases that may present similar signs.
8. **Therapy:** The usually recommended treatment regimen; e.g., ciprofloxacin, doxycycline, and penicillin G for anthrax in humans. Penicillin and tetracycline in animals.
9. **Prophylaxis, Prevention and Control**: The current accepted prevention and control measures; e.g. vaccination of horses for West Nile Virus and reduce exposure to mosquitoes. Humans should avoid exposure, use protective clothing and/or mosquito repellants such as Deet.
10. **Bioterrorism Implications**. The Bioterrorism potential and the method of exposure; e.g., anthrax is a class " bioterrorism agent, and the spores can be disseminated by aerosol.
Case Study: Make this a problem solving exercise where you decide, develop or create a fictitious case study. You should pose this problem case at the beginning and the best solution at the end of your presentation.
Confidential Evaluations: Each student will turn in a confidential evaluation of the participation and value to Group's project by each of the other members of their respective group. Please give a numerical value (%). Personal comments about the work ethic of individuals is encouraged. This may be e-mailed to Dr. Russell.

Grades: Each group will be graded and each student in the group will receive the same grade, minus points for any negative confidential grade. The grades will be based on creativity, science, and effort. Group presentation grades will account for 30% of each student's zoonoses grade: PowerPoint (using the 10 items listed above) and client information sheet will count 30% grade: the zoonoses exam will count 30% of the grade; and, confidential evaluations 10%.
Each group will submit 5 multiple choice questions to Dr. Russell to be used in the exam.. Please have those to him at least 7 days before the exam.
ZOONOSES GROUP ASSIGNMENTS:

Last Name	First Name	Group	Last Name	First Name	Group	Last Name	First Name	Group
Abbott	Ashlie	1	Gable	Gadriel	8	Nichols	Travis	15
Abraham	Brad	1	Gerhardt	James	8	Odle	Jill	15
Agnese	Nancy	1	Giles	Brian	8	Parker	Jennifer	16
Albers	Kerbey	1	Glade	Michael	8	Payne	Sherrie	16
Anderson	Melissa	1	Gore	Jennifer	9	Pohler	Cody	16
Barnes	Catherine	1	Greenwell	Katherine	9	Potscavage	Allison	16
Barron	Krista	2	Gregoire	Megan	9	Purcell	Sally	16
Bayer	Diana	2	Guest	April	9	Ramirez	Lisa	16
Bechtol	Sarah	2	Gurasich	Amy	9	Ray	Anne	17
Beckworth	Laura	2	Heineman	Jodie	9	Reeves	April	17
Belote	Patricia	2	Henry	Amanda	10	Rippy	Amy	17
Belz	Katie	2	Hensarling	Amber	10	Rowan	Teresa	17
Bendall	Matthew	3	Hurt	Christina	10	Sager	Layne	17
Bennett	Brad	3	Jacques	Ryan	10	Sanchez	Eduardo	17
Berry	Amanda	3	Johnson	James	10	Short	Jennifer	17
Blinn	Jamie	3	Johnston	Jered	10	Simmonds	Stacy	18
Borchers	Candace	3	Kaspar	Kristoffer	11	Simonson	Stephanie	18
Brown	Amber	3	Keller	Dominique	11	Sirman	Bart	18
Brown	Michael	4	Kelley	Heather	11	Smith	Jacqueline	18
Brown	Susan	4	Klett	Rachel	11	Snyder	Jessica	18
Burpee	Pavlina	4	Krause	Angela	11	Solomon	Seth	18
Carr	Adam	4	Kurtz	Kelley	11	Soranaka	Eddy	18
Carter	Staci	4	Lacey	Coalson	12	Southerland	Amy	19
Cassens	Annetrea	4	Lamb	Lauren	12	Speed	Rachel	19
Cauthen	Laura	5	Landis	Ellen	12	Stewart	Laura	19
Cavitt	Justin	5	Leach	Stacey	12	Swim	Emily	19
Chacon	Genny	5	Lee	Ryan	12	Tatman	Shawn	19
Chaffee	Beth	5	Leestma	Katie	12	Terrazas	Luis	19
Christensen	Rickie	5	Leonard	Nichole	13	Thedford	Jennifer	19
Clegg	Jennifer	5	Lynch	Emily	13	Tovar	Tricia	20
Crim	Marcus	6	Makarski	Lori	13	Tran	Quynh	20
Cruz	Jessica	6	Marsh	Chad	13	Turner	Nancy	20
Cruz	Veronica	6	Martin	Cristalle	13	Vance	Leah	20
Culica	Alina	6	Martin	Thomas	13	Vargas	Erin	20
D'orazio	Kelly	6	Mcclure	Jennifer	14	Vasquez	Laura	20
Debender	Rachel	6	Mcelwee	Dustin	14	Wellman	Lindsay	20
Dockins	Jennifer	7	Mcmurrey	Anna	14	Wells	Jennifer	21
Doerfler	Heather	7	Miller	Lesley	14	Whitehill	John	21
Doyle	Crystal	7	Morton	James	14	Willingham	Callie	21
Duncan	Courtney	7	Morton	Stephanie	14	Willison	Susan	21
Epstein	Cassie	7	Mulvey	Meredith	15	Woller	Robin	21
Fitzgerald	Brenna	7	Murfee	Mary	15	Wunderlich	Peter	21
Flores	Brenda	8	Neely	Austin	15	Wyatt	Ladona	21
Gable	Gadriel	8	Newton	Ross	15			

CVM COURSE EVALUATION:
All students are expected and requested to complete the CVM Course Evaluation Form on the website near the end of each semester. Students will be notified by e-mail and in class when the Evaluation Forms are to be completed.

CLASSROOM COMMUNICATION FORM:
A copy of the Classroom Communication Form is available from the Office of the Associate Dean for Professional Programs or from the TAMU website and students should feel free to use this form should they feel the need arises during the semester.

THIS SYLLABUS IS SUBJECT TO CHANGE.

Course Content (Lecture periods):

Week No.	Class No.	Class Content	Article (to be read by this class	Exercise	Reading for this class	Instructor
1	1: 1/6	**Introduction** to course, evidence based care, set groups, expectations		1,2	intro, ch1	Slater/Norby
1	2: 1/6	**Clinical Scenarios**		3	chs1, 3	Slater
1	3: 1/7	**Treatment & Prevention** - type of study	1,2,3	4	ch 4, pp 41-2, ch5	Slater
2	4: 1/11	- strengths/weaknesses of studies	4	5	(ch 14)	Slater
2	5: 1/13	- application, *Exercise 2 due*		6		Slater
2	6: 1/13	- statistics		7		Slater
2	7: 1/14	- continued		8	ch 6	Slater
3	8: 1/18	**Disease Detection**, review	5	9		Slater
3	9: 1/20	- evaluating a study				Slater
3	10: 1/20	- additional concepts, **QUIZ 1**				Norby
3	11: 1/21	- Principles of Herd Health			ch 12, 13	Slater
4	12: 1/25	- herd level diagnosis				Norby
4	13: 1/27	- freedom from disease				Norby
4	14: 1/27	- Monitoring & Surveillance	6			Norby
4	15: 1/28	- examples		10		Norby
5	16: 2/1	- food safety, biosecurity				Norby
5	17: 2/3	- Food Outbreaks				Fosgate
5	18: 2/3	- continued				Fosgate
5	19: 2/4	- Monitoring Continued				Norby
6	20: 2/8	- continued				Norby
6	21: 2/8	**Prognosis**	7	11	ch 7	Slater
6	22: 2/10	Review				Slater/Norby
	2/11	**Exam 1:** 8:00 – 8:50 am				

		Room 101				
6	23: 2/11	- continued				Slater
7	24: 2/15	**Causation**			ch 8	Slater
7	25: 2/17	- exercise	8, 9, 10	12		Slater
7	26: 2/17	- how do we prove it?				Slater
7	27: 2/18	**Antimicrobial Resistance**				Norby
8	28: 2/22	- small animal				Slater
8	29: 2/24	- agricultural				Norby
8	30: 2/24	- continued		13		Norby
8	31: 2/25	- HACCP & risk assessment				Norby
9	32: 3/1	TBA **QUIZ 2**				
9	33: 3/3	**Inspection**				Kruskopf
9	34: 3/3	- continued				Kruskopf
9	35: 3/4	Free-roaming animals & Public Health				Slater
10	36: 3/8	Real world outbreaks				Lillibridge
	3/9-11	No Class, Symposium				
	3/14-18	No Class, Spring Break				
11	37: 3/22	Review				Norby/Slater
11	38: 3/24	**Inspection**				McDougal
11	39: 3/24	- continued				McDougal
	3/25	**Exam 2**: 8:00 – 8:50 am Room 101				

11	40: 3/25	Zoonotic Tuberculosis & Paratuberculosis	Group 1	Russell, Gibson
12	41: 3/29	Giardiasis & Cryptosporiosis & Cyclosporiasis	2	Russell, Gibson
12	42: 3/31	Brucellosis & Leptospirosis	3	Russell, Gibson
12	43: 3/31	Glanders & Melioidosis	4	Russell, Gibson
12	44: 4/1	Chlamydiosis	5	Russell, Gibson
13	45: 4/5	Toxoplasmosis & Cryptosporidiosis	6	Russell, Gibson
13	46: 4/7	Bartonellosis & Pasteurellosis	7	Russell, Gibson
13	47: 4/7	Tularemia & Bubonic Plague	8	Russell, Gibson
13	48: 4/8	Anthrax & SARS	9	Russell, Gibson
14	49: 4/12	Salmonellosis & Campylobacteriosis	10	Russell, Gibson
14	50: 4/14	Rabies	11	Russell, Gibson
14	51: 4/14	Transmissible Spongiform Encephalopathies	12	Russell, Gibson
14	52: 4/15	Equine Encephalitis (WEE, EEE, & W.Nile)	13	Russell, Gibson
15	53: 4/19	Monkey Pox and Monkey B Virus	14	Russell, Gibson
15	54: 4/21	Hemorrhagic Fevers, Hendra/Nipah Disease	15	Russell, Gibson
15	55: 4/21	Visceral, Larval and Cutaneous Migrans	16	Russell, Gibson
15	56: 4/22	Chagas Disease & Trypanosomiasis	17	Russell, Gibson
16	57: 4/26	Hydatid Disease & Cysticercosis	18	Russell, Gibson

16	58: 4/28	Leishmaniasis & Amebiais	19	Russell, Gibson
16	59: 4/28	RMSF, Ehrlichiosis & Murine Typhus	20	Russell, Gibson
16	60: 4/29	Lyme Disease	21	Russell, Gibson
	5/3	**Exam 3:** 10:00 – 11:50 am Room 5 During Finals		

THESE ARE THE TERMS WHICH WILL BE EXAMINED ON THE QUIZES!!! (Quiz 1: 1/20, Quiz 2: 3/1)
You should be able to explain what they are in your own words, give an example, and use appropriately.

Primarily Quiz 1
Accuracy
Analytical studies
Bias
Case-Control Studies
Categorical (discrete) data
Cohort Studies (follow-up or, incorrectly, prospective studies)
Continuous data
Cross-Sectional Studies
Descriptive studies
Experimental studies
Exposure (exposed (E+), unexposed (E-))
Incidence
Negative predictive value (NPV)
Nominal data
Observational studies
Ordinal data
Outcome (diseased (D+), non-diseased (D-))
P-value
Positive predictive value (PPV)
Power
Precision
Prevalence (pre-test probability)
Prospective
Random assignment or randomization
Relative risk or risk ratio (RR)
Retrospective
Sensitivity (true positive rate, TPR, Se)
Specificity (true negative rate, TNR, Sp)
Test

Primarily Quiz 2
Antimicrobial resistance
Food safety

Food security
Monitoring
Prevalence (pre-test probability)
Public Health
Surveillance (active vs passive)

CHECKING YOUR UNDERSTANDING:

Treatment and Prevention Study Design and Evaluation:

What you should know:
Understand the difference between means and medians and when to use them.
Know what categorical and continuous data are.
Be able to tell if something is statistically significant given a p-value and to describe what that p-value means.
Realize that what is printed (or stated) is not always correct.
Know that fewer animals in a study may mean that there may not be enough for a statistically significant result.
Know that fewer animals in a study may mean that they may not be representative in important ways of the population you are dealing with or interested in.

What you should be able to do:
Be able to state a clinical question from a clinical scenario.
Be able to tell if a study is retrospective, prospective, observational, experimental, analytical or descriptive.
Be able to identify exposure and outcome in an epidemiological study.
Be able to identify and describe the key characteristic of each specific study design (emphasis on clinical trials, cohorts and case series).
Be able to determine how good an article or other resource is using the guidelines from class.
Be able to identify and describe at least 2 strengths and weaknesses for a study.
Be able to tell if a study is randomized or blinded and what that means.
Be able to distinguish incidence and prevalence.
Be able to describe what a p-value tells you

Disease Detection (first part…more to follow):

What you should know:
Understand what ROC and AUC tell you about a test (and how they are related to one another)
Understand the trade off between sensitivity and specificity for tests with continuous outcomes

What you should be able to do:
Be able to decide how good an article on testing is
Be able to identify the gold standard and decide if it is a good one
Be able to calculate predictive values given a test's sensitivity and specificity.
Be able to predict the direction of change for a predictive value with changes in prevalence.
Be able to list 3 ways to determine a disease's prevalence.
Understand and describe the importance of the disease severity or stage on sensitivity and specificity.
Be able to describe the effect of changing a cut-off on a test with a continuous measurement on sensitivity and specificity

Be able to identify and give examples of continuous and categorical variables
Be able to describe the general components of a "population health" program.

Prognosis and Causation:

What you should know:
The concept that causation is an interrelated set of factors.
What are some of the common models to describe causation.
What are the criteria to determine causation.
Be able to recognize some common statistical tests and when they might be used.
What survival analysis is in general terms

What you should be able to do:
Be able to describe when to use a mean or median and to tell if they are used appropriately in an example.
How to calculate and interpret a morbidity or mortality rate.
How to interpret a relative risk and odds ratio and decide whether they are statistically significant or not.
How to interpret a survival curve in an example
What the agent, host, environment triangle means and list some examples for each element.
Be able to describe and identify a clinically or biologically important difference compared to a statistically significant difference.

AMR and Inspection still to come….