

Jordan University of Science and Technology
Faculty of Veterinary Medicine
Department of Pathology and Animal Health
Second Semester 2006/07

Course Information	
Course Title	Epidemiology and Herd Health
Course Number	VM 562
Prerequisites	VM474 Veterinary Infectious Diseases
Course Website	
Instructor	Labib Sharif and Shawkat Hailat
Office Location	G1L2
Office Phone	22019; 22029
Office Hours	10-12 S,T,Th
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Teaching Assistant	Not present
Course Description	

Text Book	
Title	Veterinary Epidemiology
Author(s)	Michael V. Thrusfield
Publisher	Blackwell Publishing
Year	2005
Edition	Second. Note 3 rd edition just published in 2007
Book Website	http://www.amazon.com/Veterinary-Epidemiology-Michael-V-Thrusfield/dp/0632048514
References	

Assessment Policy		
Assessment Type	Expected Due Date	Weight
First Exam	March 22, 2007	30%
Second Exam	April 29, 2007	25%
Final Exam	June 2, 2007	40%
Assignments	May 15, 2007	5%

Course Objectives		Weights
1.	Describe disease and mortality distributions in animal population	20%
2.	Understanding and applying basic statistical techniques	25%
3.	Know basic design and statistical analysis of epidemiological studies	15%
4.	Apply epidemiological techniques for investigation of an outbreak.	20%
5.	Know vaccination programs in different animal species applied in Jordan	10%
6.	To know principles of screening programs and calculating sensitivity, specificity, false negative, false positive and predictive positive rates	10%

Teaching & Learning Methods
Lectures and problem solving exercises

Learning Outcomes: Upon successful completion of this course, students will be able to		
Related Objective(s)		Reference(s)
1-Describe endemic and epidemic diseases		Chapter 2 and Handouts
2- Making descriptive statistics for production and disease data.		
3- Applying basic analytical statistical tests		
4- Making proper design for epidemiological studies		
5- Applying screening program for animal diseases		
6- Contributing in epidemic investigation of outbreaks		
7- Contributing in applying vaccination programs		

Useful Resources
<u>World Animal Health Organisation (OIE):</u> http://www.oie.int Mediterranean Zoonoses Control Programme: http://www.mzcp-zoonoses.gr/ <u>World Health Organisation :</u> http://www.who.int/en/ <u>Centers for Disease Control and Prevention, Atlanta:</u> http://www.cdc.gov/ <u>Food and Agricultural Organisation of the UN:</u> http://www.fao.org/ Sharif L. Biostatistics For Health and Life Sciences, 2005

Course Content		
Week	Topics	Chapter in Text (handouts)
1	- Definition and scope of veterinary Epidemiology. - Uses of Veterinary Epidemiology	
2	- Descriptive epidemiology by animal time and place. - Transmission and maintenance of infection. - Determinants of disease and Herd Immunity	

3	- Measurement of animal diseases and mortalities: - Incidence, prevalence ,Period prevalence, attack rate and infection rates - Mortality rates: Crude death rate, cause specific mortality rate, case fatality ratio, Proportionate mortality ratio, neonatal mortality rate, fetal death rate, crude live birth rate, general fertility rate, pregnancy rate, feed conversion ratio	
4	Measures of Central Tendency: Arithmetic mean, Median, and Mode. Measures of Variability: - Range, Variance, Standard deviation and Coefficient of Variation. Hypothesis Testing: - Null Hypothesis and alternative Hypothesis - Z and t-tests for one population mean.	
5	- Z and t-tests for two population means: - Z-test for Binomial Distribution: One population proportion Two populations proportions	
6	- Chi square test for 2x2 table. Exercises	
7	- Screening program: Principles and design. - Sensitivity, specificity, false negative, false positive and predictive positive rate.	
8	- Types of epidemiological studies: - Cross-sectional study - Case-Control study	
9	Types of epidemiological studies: - Prospective study - Clinical Trial	
10	Sampling methods	
11	- Sampling methods. - Exercises and revision	
12	Risk Analysis: - Risk Assessment - Risk Management - Risk communication - Quantitative risk assessment	
13	- Field investigation of an outbreak: - Common source epidemic - Propagated epidemic	
14	- Strategies for diseases control - Vaccination programs against animal diseases in Jordan	
15	- Epidemiology of Infectious diseases - Zoonosis - Brucellosis	

Additional Notes	
Assignments	Exercises on screening program will be given 5 points. Statistical problems are used to help development of student skills.
Exams	Problem solving, Multiple choice questions and short essay.
Cheating	University rules will be applied
Attendance	This is an analytical skill course your attendance is essential to get high grade!
Workload	
Graded Exams	You can see and check your exam paper.
Participation	Your active participation in problem solving will help you a lot to acquire skills.
Laboratory	
Projects	