

Course Syllabus

VM: 563 Epidemiology and Herd Health
Faculty of Veterinary Medicine,
Jordan University of Science and Technology

Course credit: 3 credit hours

Prerequisites: VM474 Veterinary Infectious Diseases

Instructors: Dr. Labib Sharif

First Semester: 2021/22

Course Objective: Upon successful completion of this course, student acquires knowledge and skills that enable him to:

1. Describe disease and mortality distribution in animal population
2. Understand and apply basic statistical techniques
3. Know basic design and statistical analysis of epidemiological studies.
4. Know vaccination programs in different animal species applied in Jordan.
5. Apply epidemiological techniques for investigation of an outbreak.

Evaluation and Grade Distribution:

First Exam.	25
Second Exam.	25
Or Midterm	50 According to the university instruction
Final Exam.	50

Total	100

Recommended References:

1. Blaha T., Applied Veterinary Epidemiology.
2. Schwabe C. et al., Epidemiology in Veterinary Practice
3. Halpin B., Patterns of Animal Disease
4. Martin S., et al., Veterinary Epidemiology "Principles and Methods".
5. Sharif L. Biostatistics For Health and Life Sciences.

Course outline

Week # 1:

- Introduction, definition and scope of veterinary Epidemiology.
- Uses of Veterinary Epidemiology
- Descriptive Epidemiology: Animal

Week # 2:

- Descriptive Epidemiology: Time
- Descriptive Epidemiology: Place
- Determinants of disease and Herd Immunity

Week # 3:

- Measurement of animal diseases and mortalities
- Incidence rate, prevalence rate, Period prevalence rate, attack rate and infection rate
- 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, Conceptional rate, Feed conversion ratio, milk production per day.

Week # 4:

- **Confidence Interval for:**
- one population mean: when population standard deviation is known z-test
- Two population means: when the two population standard deviations are known z-test
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Week # 5:

Chi squared test for 2x2 table

Week # 6: Online

- **Exercises**
- Exercises solving**

Week # 7:

Screening program: Principles and design.

Screening program: sensitivity, specificity, false negative, false positive and predictive positive rate.

Session # 8:

Types of epidemiological studies:

Cross-sectional study

Case-Control study

Week # 9:

Types of epidemiological studies:

- Prospective study
- Clinical Trial:

Week # 10 Online

- Sampling methods.

Week # 11online

- Exercises and revision: online

Week # 12:

Risk Analysis:

- Risk Assessment
- Risk Management
- Risk communication
- Quantitative risk assessment

Week # 13: Online

- Field investigation of an outbreak: common source epidemic
- Propagated epidemic

Week14:

- Strategies for diseases control
- Vaccination programs against animal diseases in Jordan

Week15#:

- Epidemiology of Infectious Diseases
- Zoonosis
- Brucellosis