# Course specification of undergraduate

## 1-Basic information

| | |
|---|---|
| **Course Code:** | **EPD: 3240** |
| **Course title :** | Principles of Epidemiology |
| **Program title:** | B. Sc. Veterinary Medical sciences |
| **Academic year:** | 3rd academic Year |
| **Contact hours/ week** | 4hours/ week (Lect. 2h/week; Pract. 2h/weeks) |
| **Approval Date** | |

## 2-Professional information

**Overall aims of course**:

**This course aims to:**

1- Provide the students with the basic knowledge related to definition and scope of epidemiology.

2- Explain the types of epidemiological studies, patterns of disease occurrence,different epidemiologic studies,chain of infection and concepts of disease occurrence.

3- Calculate the basic epidemiology measures.

4- Design and implement a plan for prevention,control,and eradication of epidemic diseases.

5- Apply concepts, methods, and tools ofepidemiology in prevention and control ofhealth problems in both veterinary and public health aspects.

## 3- Intended learning outcomes of course (ILOs)

**a- Knowledge and understanding:**

**By the end of this course the student should be able to:**

a.1Familiarize with thedefinition, objectives, uses and applications of epidemiology.

a.2 Recognize bothdescriptive and analyticalepidemiology.

a.3. Recognize the methods of sampling from a population.

a.4.Illustratethe natural history of the disease, etiology of disease, and chain of infectionof bothepidemic diseases and zoonoses.

a.6Summarize generalpreventive and control measures of both animal and zoonoticdiseases.

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a.7 Realize the patterns of disease occurrence and epidemic curves.

a.8Familiarize the measures of disease occurrence and evaluation of both screening and diagnostic testing.

**b- Intellectual skills**

**By the end of this course the student should be able to:**

b.1 Adapt a study for investigating an outbreak of epidemic diseases.

b.2 Interpret the collected data about disease (cause, source, transmission, occurrence, chain of infectionetc) in both veterinary and public health aspects.

b.3 Critique the potential factors increase risk of diseases to host, agent and environmental determinants.

b.4Utilize a program for prevention and control of epidemic diseases.

b.5 Interpret the shape of epidemic curve.

b.6Design an epidemiologic study.

b.7 Compare between diagnostic and screening testof epidemic diseases.

**c- Professional and Practical Skills:**

**By the end of this course the student should be able to:**

c.1 Managelocally available raw materials, conditions, and management structure to optimize epidemic diseases and consequently animal health and production.

c.2. draw an epidemic curve of disease outbreaks.

c.3Manage and Re-operate livestock farms in orders of biosecurity regulations.

c.4Implement the validity of screening and diagnostic tests for epidemic and emerging infectious diseases.

C.5follow up any problem affects the animal performance and options of control.

C.6 Apply the steps of investigation during an outbreak of epidemic disease.

c.7 Assess the plan of disease control and prevention strategies

**d- General and transferable skills**

**By the end of studying the course, the student should be able to:**

d.1 Communicate effectively with public, colleagues and appropriate authority.

d.2 Work effectively as a member of team in delivering the services to community.

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d.3 Utilize communicating skills and have access to the internet and retrieve the information.

d.4 Be committed to ongoing learning and self-evaluation.

d.5 Increase student ability of creative thinking.

d.6 Deal with computer and Microsoft office program.

**4-Topics and contents**

| Course | Topic | No. of hours | Lectures | Practical |
|---|---|---|---|---|
| (Lect1 h./week, Pract. 2 h./week) | **Course description** | 2 | 1 | 1 |
| | • Definition of Epidemiology<br>• Historical Evolution of Epidemiology<br>• Uses - Core Epidemiologic Functions | 4 | 2 | 2 |
| | Etiology of disease- Epidemiologic triad | 4 | 2 | 2 |
| | Epidemiological sequence "How does epidemiology work? | 2 | 2 | 0 |
| | Natural History and Spectrum of Diseases | 2 | 1 | 1 |
| | Risk analysis of epidemic disease(hazard identification & characterization- scenario tree & pathway). | 6 | 2 | 4 |
| | Risk mitigation and communication | 4 | 2 | 2 |
| | Concept of disease occurrence and chain of infection | 6 | 4 | 2 |
| | Principles of prevention and control of epidemic diseases | 4 | 2 | 2 |
| | Epidemiological studies | 4 | 2 | 2 |
| | Sampling Strategies ( types) | 3 | - | 3 |
| | Diagnosis of epidemic diseases "<br>Screening & diagnostic test " | 6 | 2 | 4 |
| | Practical Applications of Epidemiology | 3 | 3 | 0 |
| | Investigating an Outbreak | 6 | 3 | 3 |
| | Case study and farm visit | 6 | 2 | 4 |
| | Total | 52 | 26 | 26 |

## 5-Teaching and learning methods

5.1. **Lectures:** depending on the sharing efforts of the students and supported with macromedia and multimedia aids.

5.2**. Training visits**: to livestock and poultry farms

5.3. **Practical sections:**

5.4. **Self-learning:** Electronic learning, Seminars, scientific search on related

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websites, international, national and local journals, and related books in faculty library.

5.5. **Summer training course**

5.6. **Assays, presentations and reviews**

5.7. **Discussion groups**

**7-Student assessment**

**7.1. Assessments methods:**

| Method | Matrix alignment of the measured ILOs/ Assessments methods | | | |
|---|---|---|---|---|
| | **K&U** | **I.S** | **P&P.S** | **G.S** |
| Written Exam | a1,4,5,6,7,8 | b1,3,4-7 | c1,2,4,5,6,7 | d3,4 |
| Practical Exam | | b2,4,7 | c2,3,4,6 | d3,5 |
| Oral Exam | a1,2,3,4,5,6,7,8 | b4,5,7 | c1,3,7 | d3,5 |

**7.2. Assessment schedules**

| Method | Week(s) |
|---|---|
| Practical exams | 15th |
| Written exams | Managed by administration |
| Oral Exam | Managed by department |

**7.3. Weight of assessments**

| Assessment | Weight of assessment |
|---|---|
| Practical exams | 20% |
| Written exams | 50% |
| Oral Exam | 20% |
| activity | 10% |
| total | **100%** |

## 8- List of references

**8.1. Notes and books**

Departmental notes on:

**8.2. Essential books:**


- Farm Animal Health. A practical Guides.Cullen, P.T. (1991): 1st Ed.
- Veterinary clinical epidemiology. Ronald D. Smith (Taylor & Francis (2006)
- Introduction to environmental epidemiology, Evelyn O. Talboott, (1995).
- Animal Disease Surveillance and Survey Systems: Methods and Applications, Mo Salman. Wiley-Blackwell; 1st edition (2003)
- Herd health, W.B Saunres Company (1994).

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- Preventive Veterinary Medicine, Reinhard Böhm and Brian Cook, Published by Elsevier Science B.V. (1996).
- Concise Review of Veterinary Microbiology, Quinn, P.; Markey, B.K., Blackwell Publishing Ltd (2003)

**8.3. Recommended texts**

1. Veterinary Epidemiology: Principles and Methods, S. Wayne Martin, Alan H. Meek, PrebenWilleberg, Iowa State Press; 1st edition (1987)

2. Guidelines on disinfection in animal husbandry for prevention and control of zoonotic diseases by (World Health Organization, 1984)

**8.4. Journals, Websites ……..etc**

- **Journals:** Journal of Animal Science
- J. Environmental monitoring and assessment
- J. Preventive veterinary Medicine

**Websites**

http://www.vetmed.wisc.edu
http://www.WHO.int/en/
http://www.CDC.com/

**http://www.OIE.com**

**Course Coordinators** **Head of Department**

**AsmaaNady MohammedProf. Dr. Mohamed Ali**

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| | Topics | week | Intended learning outcomes of course (ILOs) | | | |
|---|---|---|---|---|---|---|
| | | | K and U (a) | I.S (b) | P. P.S. (c) | G.T.S (d) |
| 1 | • Definition of Epidemiology<br>• Historical Evolution of Epidemiology<br>• Uses - Core Epidemiologic Functions | | **a1** | **-** | **-** | **d1,3** |
| 2 | Etiology of disease- Epidemiologic triad | | **a4** | **b2,3** | **C5** | **d2,5** |
| 3 | Epidemiological sequence "How does epidemiology work? | | **a4** | **b2** | **c1** | **d4,5** |
| 4 | Natural History and Spectrum of Diseases | | **a4** | **b2,3** | **C5** | **d2,4** |
| 5 | Risk analysis of epidemic disease (Hazard identification , characterization, scenario pathway | | **a2** | **b2,3** | **C6** | **d1,3** |
| 6 | Risk mitigation and communication | | **a6** | **b3** | **C7** | **d1** |
| 7 | Concept of disease occurrence and chain of infection | | **a4** | **b2** | **C2** | **d4,6** |
| 8 | Principles of prevention and control of epidemic diseases | | **a6** | **b4** | **C7** | **D1,2,4** |
| 9 | Epidemiological studies | | **a2,7** | **b4,6** | **c4** | **d2** |
| 10 | Sampling Strategies ( types) | | **a3** | **b2** | **c1** | **d2** |
| 11 | Diagnosis of epidemic diseases " Screening & diagnostic test" | | **a8** | **b2,7** | **c4** | **d1,2** |
| 12 | Practical Applications of Epidemiology | | **a1** | **b2** | **C3** | **d1,2,4** |
| 13 | Investigating an Outbreak | | **a2** | **b1** | **C2** | **d1,2,4** |
| 14 | Case study and farm visit | | **a2,4** | **b3** | **c3** | **d1,5** |