University of Sadat City
Faculty of Veterinary Medicine
Dept. of Animal Hygiene and Zoonoses
(2014-2015)

Environmental Hygiene and Pollution

(771P)

PhD COURSE SPECIFICATION

A. BASIC INFORMATION

University:	**University of Sadat City**
Faculty:	**Veterinary Medicine**
Program on which the course is given:	**PhD in Veterinary Medical Sciences (Animal and Environment Hygiene)**
Department offering the Course:	**Animal Hygiene and Zoonoses**
Course code:	**771 P**
Course title:	**Environmental Hygiene and Pollution**
Lecture (hour/week):	**2**
Practical (hour/week):	**2**
Course coordinator:	**Prof. Dr. Ahmed Byomi**

B. PROFESSIONAL INFORMATION

1. Overall aims of course

At completion this course, the veterinarian should be able to:

1. Understand the ecosystems and importance of the environmental determinants (animate & inanimate) on animals and Poultry.
2. Know the pollutants of air inside and outside animal and poultry houses, sources, effects on animals and methods of control.
3. Understand water pollutants, their effects on animals and birds and methods of treatment.

2. Intended learning outcomes of course (ILOs)

a) KNOWLEDGE AND UNDERSTANDING

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

a.1 Identify the terms of Hygiene, veterinary public health, disinfection, sterilization and sanitation.

A2- clarify the environmental and hygienic requirements of poultry farms for better keeping.

a 3– explain accurately the role of the veterinarian in protecting the environment from pollutants to produce environmentally safe animal and poultry products.

a.4- discuss fully The impact of good hygiene inside animal and poultry dwellings on human health and welfare.

INTELLECTUAL SKILLS

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

b.1- analyze the environmental requirements of farm animals and poultry.

b.2- ensure the adaptation of farm animals and poultry to their environment.

b.3- interpret the hygienic problems of farm animals and poultry in relation to their housing conditions.

b.4- layout strategies for prevention and control of pollutants and their harmful effects.

C) PROFESSIONAL AND PRACTICAL SKILLS

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

C.1- tabulate data about different microclimatic factors in animal and poultry houses under intensive production systems.

C.2- demonstrate actual conditions of farm animals and poultry keeping.

C.3- determine the environmental conditions under which farm animals and poultry are reared.

C.4- handle samples from the affected populations for further investigations to ascertain the hygienic problems.

C.5 Apply sanitation procedures for maintaining farm animals and poultry

D) GENERAL AND TRANSFERABLE SKILL

By the end of this course, the student should be able to

D1-join effectively as part of a team.

D2-handle library facilities and IT tools.

D3-improve computer / keyboard skills including word

d.4. arrange spreadsheets, presentation packages and graph

3) Topics and contents

Topics	No of hours		
	Lecture	practical	Total
- Environmental components and Ecology (Animal, microorganisms and the related ecosystems).	10	--	10
Epidemiology of environmental pollutants -Uses and types of epidemiological investigations	20	20	40

-Patterns of disease occurrence and factors affecting them. - Epidemiological triad and causation of infectious and non infectious diseases. - Role of the environment in the occurrence of diseases. Host –parasite-environment interaction -Routes of infection and modes of transmission. - counting of disease events			
Soil as an environmental component - Types of soil - Physical and chemical characters of soil - soil microorganisms - Factors affecting survival of microorganisms in soil. - Soil – plant – animal interaction.	10	--	10
Air Hygiene and pollution - Air composition and hygienic significance. - Air pollution (indoor and outdoor air pollutants) and bioremedy. - Role of man and animals in air pollution - Harmful gases inside poultry housing. - Environmental effects on poultry health (ambient	10	24	34

temperature, humidity, air speed, light). -Ventilation inside poultry buildings (natural & artificial). - Mitigation of air pollution			
Water hygiene - Hygienic significance and global water sources. - Water pollution and its sources. - Hygienic water requirements for animals. - Water –related diseases. - Methods of water treatment (Self purification, mechanical, chemical) - Water hardness (causes, drawbacks and treatment).	20	24	44
Animal and Poultry housing and disposal of litter - Aim of housing and housing requirements under intensive systems of production. - Types of housing different animals and birds. - Hygienic Problems associated with modern animal housing - Impact of intensive animal and poultry housing on the environment. - Hygienic disposal of animal and Poultry wastes.	10	--	10

Eradication of external parasites - Hygienic and economic effects of ectoparasitic infestation on poultry - Vectorial control of insects. - Control of ticks, mites, lice and flies. - The use of insecticides and their harmful effects on animals, man and the environment.	8	20	28
Total	**88**	**88**	**176**

4) Teaching and learning methods

4.1. Lectures.
4.2. Practical.
4.3. Self-learning activities.

5) Student assessment

a. METHODS:

1- Written examination	For assessment of knowledge, back calling and Intellectual skills
2- Practical examination	For assessment of practical and professional skill.
3- Oral examination	For assessment of knowledge and Intellectual skills
4- Student activities	For assessment of knowledge and general and transferable skills

b. MATRIX ALIGNMENT OF THE MEASURED ILOS/ ASSESSMENTS METHODS:

	K.U (a)	**I.S (b)**	**P.P.S (c)**	**G.S (d)**
Written exam	1,2,3,4	1,3,4		-
Practical exam		2	1,2,3,4,5	-
Oral exam	1,2,3	1,3,4		-

Student activities (assay, seminar, etc.)				**1-4**

c. WEIGHT OF ASSESSMENTS:

Assessment	Allocated Mark	Evidence
Final written exam	**50%**	Marked and signed written paper
Practical exam	**20%**	Marked and signed practical exam paper
Oral exam	**20%**	Signed list of oral exam marks
Student assignments	**10%**	Representative samples of presented materials

6) List of references

6.1. Essential books

5.3-Weight of assessments WEIGHT OF ASSESSMENTS:

Assessment	Allocated Mark	Evidence
Final written exam	**50%**	Marked and signed written paper
Practical exam	**20%**	Marked and signed practical exam paper
Oral exam	**20%**	Signed list of oral exam marks
Student activities	**10%**	Representative samples of presented materials

6. List of References

6.1.Essential books

1- Cullen, P.T.(2000): Farm Animal Health. A practical Guides, 1st ed.

2- Dewi, A.P.; Axford, R. F. E.; Marai, I. F. M. and Omed, H. (1994): Pollution in Livestock Production Systems. CAB International. Wallingford, UK.

3- Geer, B. K. (1980): Animal Health. A Layman`s guide to disease control. 2nd ed. Interstate printers and Publishers, USA.

4- Gary, N. F. (1994): Drinking water quality, Problems and solutions. Wiley Publishers, UK.

5- Last, A. M. (1983): A Dictionary of Epidemiology**.** Oxford University Press, London.

6-Standard Methods for Examination of Water and Waste Water. A.P.H.A. (2005): Inc., Washington D.C., USA.

Co. Sydney.

7- **Lim, D. V. (1989):** Microbiology. West Publish. Co.St. Paul, USA.

8- Martin, S. W.; Meek, A. H. and Willeberg, P. (1987): Veterinary Epidemiology. Principals and Methods. Iowa State University Press, Ames.

9- North, O. and Bell, D. (1990): Commercial Chicken Production Manual. 4th ed. Chapman & Hall, New York, Ny, USA.

10- Linton, A. H.; Hugo, W. B. and Russell, A. D. (1987): Disinfection in Veterinary and farm animal practice. Blackwell Scientific Publication Ltd.

11- Pepper, I. L.; Gerba, C. P. and Prussea, M. L. (1996): Pollution Science. Academic Press, Inc., California, and USA.

12- Philips, C. J. C. (2001): Principals of Cattle production. CABI Publishing, Wallingford, UK.

6.2. Journals , Websites ……..etc

Journals:

- World Poultry Science Journal.
- Journal of Infection and Immunity.
- Journal of Hygiene.
- Journal of Animal Science.
- Journal of Dairy Animal Science.
- Journal of Poultry Science.
- British Poultry Science Journal.
- Journal of Tropical Animal Health and Production.

7) Facilities required for teaching and learning

7.1. Data-show.
7.2. Network for technology transfer.
7.3. Laboratory kits for experiments.
7.4. Computer.

	Course coordinators	Head of department
Name	Prof. Dr. Ahmed Byomi	Prof. Dr. Ahmed Byomi
Signature		

Matrix alignment of course topics and ILOs

Topic	No. of hours /week		Total hours	Hours for lect.	Hours for pract.	ILOs				T&L. methods				
	Lect.	Pract.				K&U (a)	I.S (b)	P.P.S (c)	G.T.S (d)	Lect.	Pract.	Self & active leaning	Audio visual	Case study
Environmental components and Ecology - Animal, microorganisms and the related ecosystems	2	-	**10**	**10**		1	1		1,2,	+	-			
Epidemiology of environmental pollutants	2	2	**20**	**20**	20	2	2	2,3	3,4	+	+			
Soil as an environmental component	2	-	**10**	**10**		3	1	3	1,	+	-			
Air Hygiene and pollution	2	2	**34**	**10**	24	1,2,3	1	1,4,5	3,4	+	+			
Water hygiene	2	2	**44**	**20**	24	2,3,4	1,4	2,3	3,4	+	+			

Animal and Poultry housing and disposal of litter	2	-	**10**	**10**		2	2,3		,3,4	+	-			
Eradication of external parasites	2	2	**40**	**20**	20	2,3,4	4	2	1,2,	+	+			