



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



# Aquatic Animal Non-infectious Diseases

(813P)

## PhD COURSE SPECIFICATION

### A. BASIC INFORMATION

<b>University:</b>	<b>University of Sadat City</b>
<b>Faculty:</b>	<b>Veterinary Medicine</b>
<b>Program on which the course is given:</b>	<b>PhD in Veterinary Medical Sciences (Aquatic Animal Medicine and Hygiene)</b>
<b>Department offering the Course:</b>	<b>Aquatic Animal Medicine and Hygiene</b>
<b>Course code:</b>	<b>814P</b>
<b>Course title:</b>	<b>Aquatic Animal Non-infectious Diseases</b>
<b>Lecture (hr/week):</b>	<b>3</b>
<b>Practical (hr/week):</b>	<b>3</b>
<b>Course coordinator:</b>	<b>Dr. Mouhammed Khallaf</b>

## **B. PROFESSIONAL INFORMATION**

### **1) Overall aims of course**

*Upon successful completion of the course, the student will be able to:*

- J Diagnose different noninfectious diseases of fish and other aquatic animals.
- J Treat and control aquatic noninfectious diseases.

### **2) Intended learning outcomes of course (ILOs)**

#### **a) KNOWLEDGE AND UNDERSTANDING**

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

- a.1. Define the advanced terminology in noninfectious aquatic diseases.
- a.2. Outline etiology and advanced pathogenesis of aquatic noninfectious diseases.
- a.3. Describe the major clinical signs of aquatic noninfectious diseases.
- a.4. Outline the modern methods of diagnosis and treatment of aquatic noninfectious diseases.
- a.5. Realize the prevention and advanced control measures of noninfectious diseases of fish and other aquatic animals.

#### **b) INTELLECTUAL SKILLS**

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

- b.1. Analyze the results of laboratory tests with clinical signs and PM lesions to reach correct diagnosis.
- b.2. Differentiate aquatic non-infectious diseases from microbial diseases.
- b.3. Select the most suitable and economic way of treatment of disease conditions in fish.
- b.4. Select the suitable measures to control and prevent aquatic non-infectious diseases.
- b.5. Examine the quality of fish intended for human consumption.

#### **c) PROFESSIONAL AND PRACTICAL SKILLS**

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

- c.1. Investigate case history and information about the morbidity and mortality in aquatic animals.
- c.2. Prepare blood and tissue sampling, labeling and preservation of samples.
- c.3. Perform through post mortem examination of dead and diseased fish.
- c.4. Use the necessary laboratory investigations to aid diagnosis of the non-infectious diseases.
- c.5. Classify the aquatic diseases depending upon case history, clinical signs, PM lesions and laboratory findings.
- c.6. Examine drug doses accurately on a pond basis according to fish size, intensity and severity of disease.

#### **d) GENERAL AND TRANSFERABLE SKILL**

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

- d.1. Plan effectively as part of a team.
- d.2. Design different resources for self-learning such as libraries, scientific periodicals, internet and various scientific associations.

d.3. Communicate effectively.

d.4. Manage time perfectly.

### 3) Topics and contents

Topic	No. of hours		
	Lectures	Practical	Total
Clinical pathobiology	6	3	9
Aquatic animal dermatology	6	9	15
Respiratory diseases of fish	6	6	12
Hematopoietic diseases of fish	6	12	18
Musculoskeletal diseases of fish	6	6	12
Reproductive diseases of fish	6	6	12
Metabolic and nutritional diseases of fish	6	6	12
Toxicological diseases of fish	9	6	15
Enteric diseases of fish	6	6	12
Urinary diseases of fish	6	6	12
Nervous diseases of fish	6	6	12
Managemental diseases of fish	6	6	12
Traumatic diseases in fish	6	6	12
Noninfectious diseases of edible crustacea	6	6	12
Noninfectious diseases of edible mollusca	6	3	9
Noninfectious diseases of echinodermata	6	3	9
Noninfectious diseases of amphibia	6	6	12
Noninfectious diseases of aquatic reptiles	6	6	12
Noninfectious diseases of aquatic mammals	9	9	18
Clinical laboratory diagnosis of noninfectious diseases	12	15	27
Total	132	132	264

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

	<b>K.U (a)</b>	<b>I.S (b)</b>	<b>P.P.S (c)</b>	<b>G.S (d)</b>
Written exam	1,2,3,4,5	1,2,3,4		
Practical exam		2	1,2,3,4,5,6	
Oral exam	2,3,5	3,5		
Student activities				1-4

**c. WEIGHT OF ASSESSMENTS:**

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

## **6) List of references**

### **6.1. Essential books**

- J Noga, E.J. (2010): Fish Disease: Diagnosis and Treatment. Wiley-Blackwell; 2 edition, USA.
- J Fundamentals of Ornamental Fish Health.
- J Tood,J.R. (1977): Fish Health and Diseases . CAB International Wallingford, Oxon Ox10 8De, UK.
- J Michael, M.T. (1975): Crustacean diseases and management Iowa State University Press/ Ames, Iowa.
- J Jodi, R.Y. (1991): Freshwater fish disease Introduction to Quantitative Genetics. 4th Edition. Longman.
- J Tabered, A.D. (2008) Aquatic Ecosystem and related problems. 3rd Ed. FAO international publication.

### **6.3. Periodicals**

- J Index of fish Health and Production
- J Journal of fish disease
- J Indian journal of fish disease
- J Journal of fish bacteriology
- J Journal of virology

#### **6.4. Web sites**

- J [animal-world.com/encyclo/fresh/.../Diseases.htm](http://animal-world.com/encyclo/fresh/.../Diseases.htm)
- J [www.fishyfarmacy.com](http://www.fishyfarmacy.com)
- J [www.fishyfarmacy.com/symptoms.html](http://www.fishyfarmacy.com/symptoms.html)
- J [www.aquaticcommunity.com/disease](http://www.aquaticcommunity.com/disease)
- J [www.alnwadr.com/animals103](http://www.alnwadr.com/animals103)
- J [www.fishlore.com/Disease.htm](http://www.fishlore.com/Disease.htm)

#### **7) Facilities required for teaching and learning**

- 7.1 Data-show.
- 7.2 Network for technology transfer.
- 7.3 Computer.

	<b>Course coordinators</b>	<b>Head of department</b>
<b>Name</b>	<b>Dr. Mouhammed Khallaf</b>	<b>Prof. Dr. Shaaban Gad Allah</b>
<b>Signature</b>		

### Matrix alignment of course topics and ILOs

<b>Topic</b>	<b>No. of hours /week</b>		<b>Total hours</b>	<b>Hours for Lect.</b>	<b>Hours for Pract.</b>	<b>ILOs</b>			
	<b>Lect.</b>	<b>Pract.</b>				<b>K.U</b>	<b>I.S</b>	<b>P.P.S</b>	<b>G.T.S</b>
Clinical pathobiology	3	3	9	6	3	2,3	1	2,3,5	1-4
Aquatic animal dermatology	3	3	15	6	9	1-5	1-5	1-6	1-4
Respiratory diseases of fish	3	3	12	6	6	1-5	1-5	1-6	1-4
Hematopoietic diseases of fish	3	3	18	6	12	1-5	1-5	1-6	1-4
Musculoskeletal diseases of fish	3	3	12	6	6	1-5	1-5	1-6	1-4
Reproductive diseases of fish	3	3	12	6	6	1-5	1-5	1-6	1-4
Metabolic and nutritional diseases of fish	3	3	12	6	6	1-5	1-5	1-6	1-4
Toxicological diseases of fish	3	3	15	9	6	1-5	1-5	1-6	1-4
Enteric diseases of fish	3	3	12	6	6	1-5	1-5	1-6	1-4
Urinary diseases of fish	3	3	12	6	6	1-5	1-5	1-6	1-4
Nervous diseases of fish	3	3	12	6	6	1-5	1-5	1-6	1-4
Managemental diseases of fish	3	3	12	6	6	1-5	1-5	1-6	1-4
Traumatic diseases in fish	3	3	12	6	6	1-5	1-5	1-6	1-4
Noninfectious diseases of edible crustacea	3	3	12	6	6	1-5	1-5	1-6	1-4
Noninfectious diseases of edible mollusca	3	3	9	6	3	1-5	1-5	1-6	1-4
Noninfectious diseases of echinodermata	3	3	9	6	3	1-5	1-5	1-6	1-4
Noninfectious diseases of amphibia	3	3	12	6	6	1-5	1-5	1-6	1-4
Noninfectious diseases of aquatic reptiles	3	3	12	6	6	1-5	1-5	1-6	1-4
Noninfectious diseases of aquatic mammals	3	3	18	9	9	1-5	1-5	1-6	1-4
Clinical laboratory diagnosis of non infectious diseases	3	3	27	12	15	3,4	1,2	1,2,3,4,5	1-4
<b>Total</b>			<b>264</b>	<b>132</b>	<b>132</b>				