Aquatic Animal Medicine and Hygiene

(Basic course)

MASTER COURSE SPECIFICATION

A. BASIC INFORMATION

University:	**University of Sadat City**
Faculty:	**Veterinary Medicine**
Program on which the course is given:	**Master in Veterinary Medical Sciences (Aquatic Animal Medicine and Hygiene)**
Department offering the Course:	**Aquatic Animal Medicine and Hygiene**
Course code:	**--**
Course title:	**Aquatic Animal Medicine and Hygiene**
Lecture (hr/week):	**3**
Practical (hr/week):	**4**
Course coordinator:	**Dr. Mouhammed Khallaf**

B. PROFESSIONAL INFORMATION

1) Overall aims of course

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

- Diagnose different microbial and non-microbial diseases of fish and other aquatic animals.
- Treat and control aquatic microbial and non-microbial diseases.
- Identify and discuss the different types and principles of aquaculture.

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. Recognize the basic terminology in microbial and non-microbial aquatic diseases.
a.2. Compare the etiology and pathogenesis of aquatic microbial, parasitic and non-microbial diseases.
a.3. Describe the major clinical signs of aquatic infectious and non- infectious diseases.
a.4. Outline the methods of diagnosis and treatment of aquatic infectious and non- infectious diseases
a.5. Discuss the prevention and control measures of infectious and non- infectious diseases of fish and other aquatic animals.
a.6. Recognize the principles and problems of aquaculture.

b) INTELLECTUAL SKILLS

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

b.1. Correlate the results of laboratory tests with clinical signs and PM lesions to reach correct diagnosis.
b.2. Differentiate aquatic microbial and parasitic diseases from non-infectious diseases.
b.3. Select the most suitable and economic way of treatment and prevention of disease conditions in fish.
b.4. Detect the quality of fish intended for human consumption.
b.5. Order the steps of control measures in case of aquatic disease out breaks on levels of aquaculture.

c) PROFESSIONAL AND PRACTICAL SKILLS

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

c.1. Determine 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. Determine the necessary laboratory bacteriological, viral, mycotic, parasitic and clinical pathologic investigations to aid diagnosis of the microbial and non-microbial diseases.
c.4. Investigate the aquatic diseases depending upon case history, clinical signs, PM lesions and laboratory findings.
c.5. Calculate 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.
d.2. Create different resources for self-learning such as libraries, scientific periodicals, internet and various scientific associations.
d.3. Summarize his / her personal educational needs.
d.4. Join in a research team.

d.5. Organize his research results effectively.

3) Topics and contents

Topic	No. of hours		
	Lectures	**Practical**	**Total**
Introduction and basic terminology	**12**	**16**	**28**
Viral diseases of fish and aquatic animals	**18**	**28**	**46**
Bacterial diseases of fish and aquatic animals	**18**	**28**	**46**
Mycotic diseases of fish and aquatic animals	**18**	**24**	**42**
Parasitic diseases of fish and aquatic animals	**18**	**24**	**42**
Non-infectious aquatic diseases	**15**	**16**	**31**
Vaccination and clinical immunology of fish	**9**	**16**	**25**
Developmental diseases of fish and aquatic animals	**12**	**16**	**28**
Aquaculture	**12**	**8**	**20**
Total	**132**	**176**	**308**

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

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

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

b. 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

- Fish Diseases and Disorders, Volume 3: Viral, Bacterial and Fungal Infections. Patrick T. K. Woo, David W. Bruno., CABI; 2nd edition (2010).
- Noga, E.J. (2010): Fish Disease: Diagnosis and Treatment. Wiley-Blackwell; 2 edition, USA.
- Woo P.T.K. (2006): Fish Diseases and Disorders, Volume 1: Protozoan and Metazoan Infections. CABI; Second edition (June 23, 2006).
- Soderberg, R. W. (1994): Flowing Water Fish Culture. CRC Press, USA.
- Tucker, J. W. (1998): Marine Fish Culture, Springer, USA.
- Anderson,M.D. (2002) Fish disease diagnosis. An International Thomson. Publishing Company, London.
- Amlacher,S.R. (1993):Bacterial disease diagnosis, 3rd Ed., Lea and Febiger, Philadelphia PA.
- Michael, M.T. (1975):Crustacean diseases and management Iowa State University Press/ Ames, Iowa.
- Tood,J.R. (1977): Fish Health and Diseases . CAB International Wallingford, Oxon Ox10 8De, UK.
- Jodi, R.Y. (1991): Freshwater fish disease Introduction to Quantitative Genetics. 4th Edition. Longman.
- Tabered, A.D. (2008) Aquatic Ecosystem and related problems. 3rd Ed. FAO international publication.

6.3. Periodicals

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

6.4. Web sites

- animal-world.com/encyclo/fresh/.../Diseases.htm
- www.fishyfarmacy.com
- www.fishyfarmacy.com/symptoms.html
- www.aquaticcommunity.com/disease
- www.alnwadr.com/animals103
- www.fishlore.com/Disease.htm

7) Facilities required for teaching and learning

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

	Course coordinators	Head of department
Name	Mouhammed Khallaf	Prof. Dr. Shaaban Gadallah
Signature		

Matrix alignment of course topics and ILOs

Topic	No. of hours /week		Total hours	Hours for Lect.	Hours for Pract.	ILOs			
	Lect.	Pract.				K&U (a)	I.S (b)	P.P.S (c)	G.T.S (d)
Introduction and basic terminology	3	4	28	12	16	1			1-5
Viral diseases of fish and aquatic animals	3	4	46	18	28	2,3,4,5	1,2,3,4	1-5	1-5
Bacterial diseases of fish and aquatic animals	3	4	46	18	28	2,3,4,5	1,2,3,4	1-5	1-5
Mycotic diseases of fish and aquatic animals	3	4	44	18	2,4	2,3,4,5	1,2,3,4	1-5	1-5
Parasitic diseases of fish and aquatic animals	3	4	42	18	2,4	2345	1234	1-5	1-5
Non-infectious aquatic diseases	3	4	31	15	16	2,3,4,5	1,2,3,4	1-5	1-5
Vaccination and clinical immunology of fish	3	4	25	9	16	5	3,5		1-5
Developmental diseases of fish and aquatic animals	3	4	28	12	16	2,3	1,2,3	1,2,4	1-5
Aquaculture	3	4	20	12	8	6	1,2,3,4,5	1-5	1-5
total	132	176	308	132	176				